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DIESEL RAILWAY TRACTION

The April issue of this RAILWAY GAZETTE publication, illustrating and describing developments in Diesel Railway Traction, will be ready on April 1, price 2s.

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THE RAILWAY GAZETTE
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Railway Charges and Industrial Costs

DESPITE assurances that every endeavour will be made to maintain railway rates, fares and charges at their present levels, there is increasing scepticism as to whether it will prove possible to avoid rising transport costs during the current year. The White Paper showing the receipts and expenditure of the controlled railway undertakings for 1947 is still awaited, but there is a widespread conviction that when it is published it will show that railway operations for last year have been conducted at a deficit, so far as the Exchequer is concerned. It is known that labour and the costs of raw materials have advanced sharply since last year, and that railway operation has tended to become more expensive relative to receipts. The Government has declared its intention of securing stabilisation of costs and prices, and the level of transport charges enters largely into both of a wide variety of goods. In the House of Commons, on March 18, the Prime Minister was asked if he would give an assurance that no further increases would take place in the price of coal, gas, electricity, and railway freight and passenger fares. He replied that the Government White Paper on incomes, costs and prices had been brought especially to the attention of the boards of socialised industries. The nationalised railways have to carry an interest charge of some £30½ million, as compared with about £41 million during the period of control. Private industry has been urged to reduce prices and to absorb the difference in its profit margin. If, in the case of the railways, this "profit margin" was, in fact, a loss, it would be made good by the taxpayer, so that whichever way is decided, he will foot the bill.

Winter Transport Committee Wound Up

The Ministry of Transport has announced that the Winter Transport Executive Committee, set up in the autumn of last year, has ceased its activities. In its final report the Committee points out that the wagon stock available at the beginning of last October was 1,019,349, or more than 51,000 fewer than at the same date in 1946, and 83,000 less than the comparable figure for 1945. At the same date there were 93,000 tons of steel on hand at steel works, and during September and October over 100,000 tons of coal had to be stacked because of shortage of wagons. The situation was attacked along four lines—reducing the turn-round time of wagons, speeding of repairs, relieving the manpower shortage in certain railway grades, and diverting traffic from rail to road transport and coastwise shipping. As soon as the danger of a railway transport difficulty this winter had passed, the instructions to divert traffic from rail were modified, and the system of priority in wagon supply for certain traffic had been discontinued. The report points out that engine and wagon construction repairs still suffer from shortage of manpower and raw materials, and that priority in allocation of steel and timber is necessary to enable permanent way maintenance and wagon repairs to be overtaken.

Rates Structure for Goods by Road

An advisory rates schedule has been prepared by the National Conference of Road Transport Clearing Houses for submission to the Ministry of Transport and the British Transport Commission. It is designed to provide a single form of charging, and consists of two essential parts. They are a basic rates schedule built up on mileage, and a set of simple rules for the classification of traffic according to packing, value, and liability to damage and pilferage. Normal traffic carried under normal conditions is placed in a class "D" category and rates are tabulated according to mileage and tonnage as applicable to one collection and one delivery. There are six other categories; class "A" is rated at basic plus 25 per cent., class "B" at basic plus 15 per cent., and class "C" at basic plus 5 per cent. Class "E" is basic minus 5 per cent., class "F" basic minus 15 per cent., and class "G" basic minus 25 per cent. Methods are set out of assessing the class into which traffic would fall according to packing and value per ton and mileage and to damage or pilferage, and also of assessing commodities where the bulk exceeds 80 cu. ft. per ton for both capacity and part-loads, and of assessing mileage to outlying towns and distant villages.

Increase Your Efficiency or be Nationalised!

The "awful example" of nationalisation of their opposite numbers in Great Britain is now being waved in the faces of the United States railways. They are told by our American contemporary, *Railway Engineering and Maintenance*, that they should be thankful that there is no immediate danger of their sharing this fate, thanks to their "basking in a relatively high degree of official and public esteem" at present. Among the reasons given for this happy state of affairs is that the American people greatly appreciate the war record of its railways, and realises that, whilst accomplishing this "impossible task," they contributed \$3 million daily to the Government in taxes without increasing freight rates. During the first world war, Government operation cost the taxpayers \$2 million a day, despite substantial freight rate increases. Moreover, the public appreciates the record tonnages of coal and grain handled subsequently. Meanwhile, the railways are "building up new records of performance as measured by almost every index of operating efficiency." It is significant that American rate increases amount to an overall average of only 30 per cent. since 1939, including two interim increases, whereas wages have risen by 70 per cent. and cost of materials by 88 per cent. during the same period. The railways are warned, however, that this present public good will must be retained and enhanced, if there is to be a "continuance of the 'American Way' (as opposed to nationalisation) for the railroads."

Railway Executive's Track Renewals

In our March 12 issue we published a letter from "Statistician" querying a statement made by the Chairman of the Railway Executive that "the programme of permanent way renewals during the current year provided for dealing with over 600 miles." Our correspondent pointed out that in no previous year had less than 946 miles of track been renewed. The Government's "Economic Survey for 1948" deepens the mystery about the Railway Executive's policy. The Survey says that it would be desirable to lay 300,000 tons of rails, but it will be possible in 1948 to provide only 250,000 tons. This seems to be one more instance of our planners being out of touch with realities. A tonnage of 250,000 would suffice for the renewal of 1,600 miles of track, as compared with 1,485 miles renewed in 1938 and 1,314 miles in 1929. The programmes for these years were unusually heavy, each absorbing about 220,000 tons of rails. That tonnage appears to be a maximum which has not been exceeded since the amalgamation of 1923. In existing conditions it is not clear how our engineers could handle 30,000 tons more than they did in pre-war years when sleepers were abundant and plenty of labour was available. We hope, therefore, that the Railway Executive will make a further statement at an early date about the permanent way programme to be taken in hand during 1948.

Single-Phase Traction at 50 Cycles

Although the d.c. system at 1,500 V. has been adopted for the main-line electrification now proceeding in France, technical opinion in that country is fully alive to the possibilities of other methods. Three papers were presented recently to the French Association for the Advancement of Science on single-phase a.c. traction at 50 cycles, experiments with which have been proceeding on the Höllental line in the Black Forest region of Germany, now in the French zone of occupation. The single-phase series motor has the advantage of speed control by a tapped transformer instead of resistances, permitting a wide range of running positions on the controller. Commutation difficulties, however, have necessitated supply in most cases at 16½ cycles, involving special machinery for conversion from the normal industrial frequency of 50 cycles. It was shown in one of the papers presented to the association that recent research had made good progress in the design of traction motors capable of operating at 50 cycles with satisfactory commutation. At present the S.N.C.F. is studying the design of two locomotives with 50-cycle traction motors, and one in which the 50-cycle supply operates a rotary converter, the voltage to the d.c. motors being controlled by regulation of the generator fields. The latter could operate on 1,500 V. d.c. sections by direct supply from the contact line. The pos-

sibility of rectification by mercury-arc equipment in the locomotives also is being considered.

Southern Electric Achievement

Elsewhere in this issue we publish a second instalment of notes on the Brighton electric service and the standard of work it entails. Details recorded on a large number of journeys—spread over two years and in all but the most abnormal conditions—show a consistently high standard of operation in present-day circumstances. Only first-rate maintenance could secure such results, which, unfortunately, are often in sharp contrast to those with post-war steam traction, handicapped by inferior coal and an overtaxed and starved maintenance organisation. These notes also make it clear that the non-stop electric expresses (allowed from 58 to 60 min. for the 50.9 miles) have a wide margin of time in hand in normal day-to-day working, sufficient to allow for delays due to adverse signals and temporary engineering speed restrictions—which together average about 4½ min. on runs in both directions—and yet permit of overall gross times averaging 60½ min. in the up and 59 min. in the down direction. The latter figure is particularly meritorious because almost all the down trains concerned were in the business rush hours, when the density of traffic over the only down road available from Balcombe Tunnel box southwards, for 35 per cent. of the total distance, is frequently nearing the limit of its capacity even with the automatic colour-light signals now installed.

Locomotive Exchanges on British Railways

Locomotive exchanges on a scale never undertaken previously in this country will begin between the various regions of British Railways on April 19, with the object of selecting the most satisfactory and economical features of existing types for guidance in future design. As will be seen from the particulars published elsewhere, both express passenger, mixed traffic, and goods types are involved, and such unusual workings will be seen as "Merchant Navy's" running between London, Carlisle, and Leeds; and "Duchesses," "Royal Scots" and "A4" Pacifics on the Paddington-Plymouth and Waterloo-Exeter routes. The Western Region "Kings" will be seen on Kings Cross-Leeds journeys, but no reciprocal arrangement is envisaged at present for other types to work on the services between Paddington, Birmingham, and the North. In the mixed traffic section, the routes concerned are Perth-Inverness, St. Pancras and Marylebone to Manchester, and Bristol-Plymouth, where the classes interchanged will be the ex-L.N.E.R. "B1," the Stanier Class "5," and "West Countries," together with a "Hall" on the Marylebone-Manchester duties. Various 2-8-0 types and the "Austerity" 2-10-0s are concerned in the freight exchanges. The whole series of tests will extend over four months, the express locomotive exchanges being completed in about nine weeks, and the mixed traffic trials being held from the fifth to the twelfth weeks. Southern Region locomotives will be equipped with L.M.S.R. tenders on routes where water pick-up facilities are required.

A Transportation Corps?

The future of Transportation Services in the Army, with special reference to railways, was discussed not long ago by three high transport authorities in three articles that appeared in the *Journal of the United Services of India*. The first of these articles, based on the author's experiences in Transportation in the Middle East and Iraq during the recent war, made a strong case for a Railway Transportation Corps in the future. It argued that training on small railways, like that at Longmoor, did not produce men with sufficiently wide knowledge or experience of the multitude of problems that arise daily on intensively-worked trunk lines, such as those required as lines of communication in modern warfare. On the other hand, the experience gained in the past by Royal Engineer personnel of all ranks attached as civilians to Indian railways—subject to recall to their corps in time of war—was invaluable. So also was the Supplementary Reserve system, and the author advocated a combination of the two latter forms of training in peacetime throughout the Commonwealth.

Training of Reservists

The second article referred to above, though praising the Supplementary Reserve system in general, criticised its training of sappers because it was limited to their work in a unit, instead of making them fit to take their places as non-commissioned officers to form the nuclei of diluted or additional Supplementary Reserve units. Of the R.E. officer employed in peacetime on Indian railways, it declared that there was mutual loss of touch between him and the Army. Frequent military refresher courses should be taken by such an officer. The author advocated a far wider training of other arms in the basic principles of Transportation. He agreed that to form a Transportation Corps of adequate size, the training of Supplementary Reserve units must be Empire-wide, and—like the training of the regular personnel employed with them—it must be uniform and organised on a common basis. The third article approved generally of the formation of a Transportation Corps on the lines recommended in the other two articles, but issued a warning that Army authorities, claiming first priority when war broke out, were inclined to call up the Supplementary Reserve irrespective of the requirements of the civil transport agency, and without realisation that the military machine could not function with good effect unless its civil counterpart was maintained at the highest possible state of efficiency.

* * *

A L.M.R. Prefabrication Factory

What must surely be one of the birthplaces of the modern prefabricated building is illustrated elsewhere in this issue in an article tracing the development of pre-cast concrete production by the L.M.S.R. and L.M.R. In 1937 the L.M.S.R. consolidated experience it had gained in this work during preceding years and built a central depot at Newton Heath, replacing three smaller depots. Full advantage was taken of the opportunity to design a scientific layout, permitting centralised production from one large mixing plant and employment of economic methods of conveying and handling. This was achieved in part by specialisation, so that reinforcement is made in one shop, castings in another, which is divided into four areas for units of different sizes, and timber moulds in the neighbouring district engineer's shops; a separate form shop for the depot is to be set up as soon as possible, however. Units are stored in an outside storage area covering nearly one acre. For handling the heavy materials and products full use is made of overhead cranes, belt conveyors and a worm screw conveyor, which delivers cement to the mixers. With this equipment the Newton Heath depot is able to cast bridge units weighing up to 25 tons, with which most concrete manufacturers are unable to cope. Capacity of the shop has not yet been fully realised, but is estimated to be 8,000 cu. ft. of concrete per week. Present output is just under 6,000 cu. ft. per week, about 60 per cent. of which is normally in small articles weighing less than one ton.

* * *

The Derailment near Bletchley, L.M.S.R.

Our summary of Lt.-Colonel Woodhouse's report on the derailment near Bletchley on May 29, 1947, shows it to have been a pure accident, no person being in the least to blame. There was sudden buckling of the track, probably due, says the report, to a "trigger effect" produced by the passage of the previous train lessening friction between sleepers and ballast and setting free compressive stresses in the track at a weak point. The weather had been growing hotter for some time, and became extremely hot on the afternoon in question. The accident occurred in a cutting, and although the train was well filled there were no serious casualties. Results undoubtedly would have been far more grave had the derailed vehicles not remained coupled and in line, and been saved from overturning by the side slope of the cutting—another instance of the way in which one or two circumstances can affect the seriousness or otherwise of an accident from the casualty point of view. The track was excellently maintained and the ganger had nothing to reproach himself with, his work being highly commended.

A Wrong Approach

WITH the establishment of the Road Transport Executive, the broad organisation of which was outlined in our March 12 issue, a new stage has been reached in the general set-up of the Executives under the British Transport Commission. In our last issue we dealt at some length with the organisation of the Railway Executive, and it is apparent from the arrangements made for the operation of the Road Transport Executive that there is to be a good deal of variation in the methods under which the various Executives of the Commission will operate. The Chief Divisional Officer on the road side, for example, although he will be broadly equivalent to a railway Chief Regional Officer, will be more directly responsible to the Executive and there is no provision for by-passing him on technical matters, as there is in the Railway Executive set-up.

We have previously expressed the view that we are not impressed by the organisation which has been devised to administer the nationalised transport industry. In certain respects it seems to overlook or disregard certain fundamental aspects of the Transport Act, 1947. For good or ill, that Act was designed to effect the nationalisation and unification of most forms of inland transport. It was not designed to nationalise railways as such. Railways are but part—albeit a major part—of the whole transport system of the country. We do not believe that the present organisation of the Railway Executive is the best that could be devised for administering unified railways; it is still less suitable for making the railways a part of a unified transport system.

The general approach to this problem appears to be open to question. As a good deal of unification had been achieved between the railways, the railway-owned docks, the railway-owned hotels and the railway-owned road transport undertakings, it seems a retrograde step to have amputated these various limbs and transferred them to other Executives. The process adopted seems to be of dispersal before co-ordination, with all the dangers which must attend the setting up of separate, and possibly diversified, organisations which may make attainment of the ultimate objective of unification more difficult than it might have been.

The adoption of the regional system for the railways was, we understand, selected because the existing organisation of the lines provided in practically all cases ready-made units, which were of reasonable size for administrative purposes. Here again, the fact that, whether administration of a unified transport system is practicable or not, it is implicit in the Act that it shall be achieved, seems to have been overlooked. It should not be assumed that either the Commission or the Railway Executive is irrevocably wedded to the regional system. In the present stage of development much of the organisation is experimental and subject to amendment in the light of experience.

A first step towards unification of transport surely must be co-ordination of rail and road. This has been recognised for the past quarter of a century as the major transport problem of the country; and it might, indeed, be argued that it was the excuse for the Transport Act. The six railway regions do not coincide with the ten to twelve divisions in which the Road Transport Executive is to be organised. One might have imagined that the first step of effecting co-ordination between rail and road might have been to have synchronised the areas in which the railways and the roads were divided for administrative purposes. Close working between the two forms of transport within areas might have done much to have achieved this end. Moreover, it is by no means clear that the road haulage divisions will be the same as the passenger road transport areas.

Taken as a whole, therefore, if it is agreed that the primary objectives of the Transport Act may be summarised as the unified working of the various transport agencies vested in the British Transport Commission, and the achievement of the greatest efficiency of economy and operation as a result of that unification, the steps which have been taken so far do not appear to hold out great promise of success. The extent to which these objectives are obtained, however, by the co-operative efforts of the various Executives under the Commission, must be the measure of the success of the experiment now being made with British transport.

New Zealand Government Railways

A STATEMENT by the Minister of Railways, the Hon. R. Semple, which prefaces the report of the New Zealand Government Railways for the year ended March 31, 1947, analyses the serious effect of increased costs in a period when gross revenue reached a record figure. The gross revenue of £15,680,057 represented an increase of 1.52 per cent., due largely to a substantial rise in revenue from railway road motor services. At the same time, however, expenditure rose by 10.84 per cent. on account of higher rates of pay and the cost of importing locomotive coal from overseas. In estimating the probable income and expenditure for the current year, it was considered that, without an increase in rates and fares, there would be an operating loss of £1,800,000. It was considered desirable to endeavour to meet operating expenses out of revenue, and accordingly as from September 14 this year passenger fares have been put up by 15 per cent. and goods rates by 20 per cent. Some operating results for the year covered by the report are shown in the table below:—

	1946	1947
Passengers, parcels and mails	£4,339,128	£3,694,479
Goods revenue	£8,515,673	£8,903,762
Miscellaneous	£2,590,046	£3,081,816
Gross revenue	£15,444,847	£15,680,057
Working expenses	£14,384,844	£15,944,270
Net earnings	£1,060,003	£264,213
Operating ratio (per cent.)	93.14	101.69
Passenger journeys	32,417,675	28,869,135
Goods tonnage	8,388,191	8,548,471
Livestock tonnage	822,275	780,862

The report, which has been sent to us by Mr. J. Sawers, General Manager of the New Zealand Government Railways, shows an operating loss of £264,213. Passenger revenue decreased by £658,761, or 16.84 per cent., although, taking into consideration the reduced receipts from Services travel, there was a slight increase in civilian passenger revenue. Shortage of coal necessitated passenger services in the North Island being reduced still further for five months of the year, and at the end of the period a miners' strike entailed the cancellation of all special trains at the Easter holiday. Consequently, £16,000 of the advance passenger bookings had to be refunded. Goods traffic was well maintained, and new records were achieved in tonnage, and revenue net ton-miles. Goods receipts, at £8,903,762, represented an increase of £388,089, or 4.56 per cent.

The General Manager deals at some length with the difficult coal position, and the measures taken to convert locomotives for burning oil. Since the New Zealand mines were unable to supply the administration's requirements, attempts were made to secure coal from abroad. Supplies are not available from South Africa, and eventually it was decided to purchase stocks from America; altogether 77,000 tons have been bought from that source. An experimental conversion of a locomotive to burn oil was completed in October, 1946, the whole work of manufacture and installation being completed by the administration's staff on account of the inability of overseas firms to supply equipment. Two experimental conversions were undertaken at first, and when these proved successful in traffic it was decided to convert a further 20 locomotives of the "K" and "Ka" classes. It is expected that 22 oil-burning locomotives will be in service in the North Island by December this year, and by March next year there should be 28 such engines in traffic. The operation of oil-burning locomotives is being concentrated in the southern part of the North Island, as it is in this region that coal supplies have been most irregular. The plans provide for eight storage depots, four of which will have a capacity of 66,000 gal. each.

During the year covered by the report, the co-ordination of railway services with the road goods services purchased by the department was extended to serve practically all points connected by rail in the North Island; similar arrangements were almost completed in the South Island. These services proved exceptionally successful both from the point of view of economic railway operation, and the release of wagons for long-distance bulk traffic. It is estimated that the use of lorries for short distance "smalls" traffic has made available over 100,000 wagon-days for bulk traffic, and as on an average a goods wagon earns over 18s. a day, on this basis alone the lorries have paid for themselves, without taking into account the revenue from the traffic handled or the savings in railway operation.

Important developments took place during the year, also, in the through booking of traffic by rail and air between the North and South Islands. These facilities, introduced at first for parcels traffic, were extended to general goods, the only restriction being the size of individual packages. A daily air cargo service was introduced in co-operation with the Royal New Zealand Air Force on February 10 this year, and in the seven weeks up to March 31, had carried 1,877,254 lb. of freight. Ordinary rates are charged for rail transport to and from Wellington (North Island), or Blenheim (South Island), with a special rate for the air portion of the journey, including transport between railhead and airfield. Taking into account hire of aircraft, wages, and cartage, the service showed a profit of £132 in the first seven weeks of operation.

Kenya & Uganda Railways & Harbours

THE report of the Kenya & Uganda Railways & Harbours for the year ended December 31, 1946, which has been sent to us by the General Manager, Mr. A. Dalton, again emphasises the importance of wagon mobility in meeting an increase of 100 per cent. in traffic without additions to rolling stock. The tonnage moved by the railways in 1946 increased by 73.33 per cent. over the 1939 figures, and concurrently the terminal time was reduced by 20.09 per cent. Even so, the report points out, wagons still spent only some 15 per cent. of their lives in movement between terminals, and for every 3½ hr. spent in running, 20½ hr. were spent standing. The report is signed by Sir Reginald Robins, who was General Manager at the time of its preparation.

Total earnings of the railways and harbours for 1946, at £5,113,040, showed an increase of £310,686. There was a rise of £104,904 in ordinary working expenditure, leaving an operating surplus of £1,880,493, or £205,782 more than in the previous year. After contributions to renewals fund, and meeting other miscellaneous charges, the surplus transferred to combined net revenue appropriation account was £745,992, or £163,482 higher than in the previous year. Some railway results for the two years are tabulated below:—

	1945	1946
Mileage open	1,625	1,625
Passenger journeys	2,848,378	3,005,181
Gross goods tonnage	2,645,626	2,564,053
Passenger receipts	735,469	722,422
Goods receipts	3,110,362	3,357,906
Other receipts	270,550	266,540
Total earnings	4,116,381	4,346,868
Working expenditure	2,719,273	2,832,565
Operating surplus	1,397,108	1,514,303
Operating ratio	Per cent. 75.52	Per cent. 73.41

Passenger traffic in the first and second classes continued to decline, the number of journeys being 39,817 and 122,715 respectively, as against 44,356 and 140,388 in the preceding year. In spite of this, the figures for 1946 were over three times those of 1939, and the accommodation position remained very difficult. Punctuality on main-line services continued to improve, although still behind pre-war standards. This is attributed to the increased volume of perishable goods traffic conveyed by passenger trains, and the report says that other means will have to be found for its conveyance if passenger train schedules are to be maintained, although the public showed a marked disinclination to use the through goods services for perishable commodities.

The total goods traffic moved amounted to 2,564,053 tons, of which 125,857 tons were military traffic, and this movement represented 147 per cent. of the 1939 figure. In 1945 the total tonnage was 2,645,626. Civilian traffic attained a total of 1,658,508 tons, representing an increase of more than 60 per cent. on 1939. The fall in military traffic, which began in 1944, continued in 1946, when it constituted only 17 per cent. of the total tonnage carried, compared with 20 per cent. in 1945. Earnings from the harbour services operated by the administration were £766,172, compared with £685,973 in 1945. These activities realised an operating surplus of £366,190, comparing with £277,603, and the final surplus balance carried to the combined railways and harbours net revenue appropriation account was £135,099, as against £24,958.

Economies were realised during the year in the fuel consumption of the principal coal-burning locomotives of the Mikado and Garratt types. There was an increase in the number of

miles run per failure with all the Garratt classes, and the war-time light "ECS" class ran 80,962 miles during the year with no failures. For the first 10 months of the year the main task of the administration was the provision of transport for military demobilisation. The end of the war did not result in any improvement in the general position of the administration, and serious difficulties arose over supplies. In particular, it was hard to meet requirements of passengers for more comfortable and additional passenger coaches, and to explain why the railway could not relieve overcrowding when the public read alluring reports of the amenities provided in other countries. The report states that there is little hope of obtaining additional upper class passenger stock for at least another two years, but consideration is being given to the extent to which existing vehicles can be reconditioned. An obstacle to this work, quite apart from the question of supplies, is the difficulty of withdrawing stock from traffic while the demand is so heavy.

Exports Under Nationalisation

AS the policy of bringing public utility undertakings into public ownership develops, new problems present themselves, not all of which could have been foreseen. Clauses of the Electricity Act and the Gas Bill, now before Parliament, which attract comment, empower the boards of both industries to manufacture plant and fittings, except for export. Under the Transport Act, the powers of the British Transport Commission are restricted to the construction and manufacture of anything required for the carrying on of railway services, which, in effect, similarly precludes participation in the export of locomotives, carriages, wagons, signalling material and, indeed, railway material in general, which has constituted an important branch of the nation's foreign trade.

As regards road motor vehicles, the powers are confined to the construction of not more than the highest number of chassis built in any one of the three years preceding the take-over. The manufacture of bodies for buses may not exceed one-fifth of the number estimated to be required for the Commission's undertakings during the same year, plus the number of bus bodies authorised to be manufactured under section 21 of the London Passenger Transport Act, 1933. Bodies for other vehicles are limited to one-fourth of the total number estimated to be required. Similar limitations are imposed on the construction of components.

It may not be evident from the first reading that the limited manufacturing powers vested in the State electricity and gas undertakings are intended to protect the domestic consumer from the depredations of price-fixing rings rather than to shield the private manufacturer engaged in foreign trade against competition from the newly-created State-owned undertakings, which, assured of a potentially considerable volume of trade at home, should they elect to make use of their powers, would be in an advantageous position to quote for foreign business.

The position as regards the manufacture of railway rolling-stock and supplies is rather different from that of the production of electric and gas appliances. For many years before the railways passed into the hands of the State, it was the practice of the companies to manufacture a considerable part of their requirements in their own workshops and, in contradistinction to the clauses of the Transport Act which specifically restrict the quantity of road equipment to be constructed in the Commission's own works, it is now permissible, in theory at all events, for the railways to manufacture the whole of their requirements. Hitherto, with a good deal of justification, private manufacturers of rolling-stock have contended that the policy followed in the days of private enterprise, and now to be perpetuated under State-ownership, was contrary to the national interest, inasmuch as it placed unnecessary obstacles in the path of exporters when deprived of so large a part of the stable domestic trade.

While the sellers' markets in railway equipment prevail, the policy of the Government in dissociating British Railways from the export of transport material, road and rail, may not cause apprehension, but when overseas sales again become subject to keen competition, as they were before the war, the Government may be confronted with a problem of no mean magnitude. Then, the question may well arise as to what is to

happen to the private rolling-stock manufacturers and the many thousands of operatives whom they employ. It is sufficiently clear that unless ways can be devised of marrying the interests of State-ownership and private enterprise on the manufacturing side of industry, the outlook for the nation and for the standard of life of the British people may prove far from reassuring.

There is nothing to be gained by deferring the framing of a long-term policy in this respect until the country is faced with the end of the sellers' markets and diminishing exports. Repeatedly, it has been made clear that a planned economy in association with a policy of nationalisation of industry, presupposes the initiation and intensification of State schemes of railway renewals and capital expenditure to synchronise with the appearance of recessions in trade. At the time when those theories were propounded, the desideratum was the prevention of mass unemployment, and it is doubtful whether the primordial importance of Britain's export trades and the pre-eminent part which they play in the livelihood of the nation were as fully understood as they are today.

A government of the future may be faced with a situation which will demand that measures to maintain exports shall take precedence over all others, even steps to ensure full employment. A certain amount of unemployment can be sustained, should such a regrettable necessity arise, but without exports to pay for indispensable imports of food and raw materials the nation cannot survive. Hence, there is urgent need to emphasise as clearly as practicable the inescapable fact which has long been well known to manufacturers, but which has not always been given the wide publicity which it deserves, that measures which divorce manufacturing activities for the home market from production for overseas must deprive the export trades sooner or later of their capacity to compete successfully against other nations in world markets. A substantial volume of home trade is a pre-requisite to economical production costs and the quotation of prices which foreign buyers can afford to pay.

As part of the general export drive, it is the policy of the Government to require manufacturers to sell overseas a certain proportion of their output so as to qualify for a share of the home trade and the statutory exclusion of the manufacturing side of State-owned undertakings from the export trade altogether seems to imply recognition that those undertakings have neither the requisite sales organisation abroad nor the administrative machinery at home to allow them to participate in overseas business. On the other hand, the transport, electricity and gas laws provide ample powers to enable the State-owned undertaking to manufacture for the home market to the possible exclusion of manufacturers engaged in exporting similar products.

Exceptionally, manufacturers of motor buses and trucks for export are assured of a proportion of the home trade under the Transport Act and, therefore, are in a privileged position in comparison with their opposite numbers in the railway locomotive, carriage and wagon industries, who are deprived of similar safeguards. But circumstances in the future may well give rise to a situation which will require the Minister of Transport to rectify what is clearly an anomalous position by using his powers under section 4 of part I of the Transport Act, whereby he is enabled to give to the Transport Commission directions of a general character as to the exercise of its functions in relation to matters which appear to him to affect the national interest. Any tendency on the part of the Commission to render itself wholly or largely self-supporting as regards the manufacture of railway rolling stock and equipment to the exclusion of the private firms on whom the nation relies for the maintenance of vital exports would be inimical to the national interest, inasmuch as without a share of the home trade the exporter cannot hope to retain his foreign business in the face of competition from producers in other countries not similarly handicapped.

Hence, experience may prove that the statutory limitation of the manufacturing activities of the Transport Commission to a fixed proportion of its requirements of road-motor equipment may also have to be made applicable to the railway side of the undertaking. Eventually, like the manufacturer of buses and trucks, the private maker of railway rolling-stock and equipment for export may have to be assured of a share of the home market in the national interest, if not by statute, by ministerial order.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Rush Job by Rail

The Railway Executive (Scottish Region),
Public Relations Office, Central Station,
Glasgow, C.I. March 16

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—On Friday afternoon, March 12, the firm of J. & A. Weir Limited, Kilbagie Paper Mills, Kilbagie, received an urgent rush order for 613 bales paper—100 tons—to be shipped immediately at London Docks.

The firm got into touch with the Stationmaster, Kilbagie, and arrangements were made to place a special train consisting of 21 fitted vehicles at its disposal. Within 20 hr. of receipt of the order by the firm, the consignment was prepared and on its way to London. The traffic arrived at Kings Cross, East Goods Yard, at 6.43 a.m. on Sunday morning, and was handed over to the Port of London Authority the following morning.

This is one of the many instances of day-to-day co-operation between industry and the railways, and the firm has expressed its high appreciation of the manner in which the consignment was handled.

Yours faithfully,

H. M. HUNTER
Public Relations Officer

Turn-Round of Railway Wagons

London, W.I. March 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—On page 331 of your March 12 issue you report the Minister of Transport as stating that he was advised by the British Transport Commission that the average daily discharge of wagons during ordinary working hours increased during the period of the wagon turn-round campaign. How can this statement be reconciled with the facts given below?

(a) *The Monthly Digest of Statistics* for February shows that the number of wagons of merchandise, minerals, and live-stock forwarded during the last sixteen weeks of 1947 was 3 per cent. below the 1946 forwardings; in each 4-weekly period the 1947 figure was lower.

(b) Week after week during the 1947 campaign the railways announced that many more wagons were unloaded outside of ordinary hours than in the corresponding period of 1946.

The B.T.C. would appear to have assured the Minister that more wagons were unloaded during the campaign than were forwarded under load. Gilbertian, isn't it?

Yours joyfully,

SAVOYARD

Effect of Diesel-Electric Locomotives on Track

188-02, 64th Avenue, Flushing,

New York, U.S.A. March 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The recent description in your paper of the L.M.S.-built diesel-electric locomotive prompts me to write to you today on this subject. I note that, in line with current U.S. practice, the nose-suspended type of electric traction motor is retained in this experimental locomotive. I am, of course, aware that this practice follows Southern Railway precedents. During the past few years, ever since the New York-Florida streamline *de luxe* train service has been dieselised, the rate of derailments of these trains is increasing at an alarming rate. In the absence of any detailed accident reports, such as you publish in your paper, I am just wondering as to the real cause of these derailments.

One of the reasons which prompted our railroads, which serve the New York to Florida winter traffic, to dieselise, is apparently the better riding quality of the individual axle-driven diesel-electric locomotive, when compared with the "hammer-blow"-suffering steam locomotive. The large masses of unsprung weight of the nose-suspended electric traction motors, coupled with the inevitable low centre of gravity, would lead one to the conclusion that the effects on the track at high speed in the presence of worn tyres might have some bearing on the cause of these derailments. The tracks of our Florida-serving railroads are said to be laid with lighter rails than is the case with the more prosperous Northern and Western carriers.

It will, therefore, be a matter of great interest to students of railroad motive power to follow the British trials of the diesel-electric locomotive, which, to judge from the description of the competing steam locomotive, *Sir William Stanier*, has a

really up-to-date competitor on its hands. In order to provide a real answer to the track-stress controversy, it would seem necessary to produce a diesel-electric locomotive with individual axle drive through a quill type of transmission, with a high centre of gravity.

Very truly yours,

DONALD T. ARUNDEL

Early Gravity Marshalling Yards

61, Airedale Avenue,

Chiswick, W.4. March 16

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Inspecting some old papers, the writer found a statement that gravity shunting was first used in Germany at Dresden in 1846, and, after a committee of investigation had studied and recommended it, hump-back shunting was introduced at Speldorf, near Duisberg, on the Rhine, in 1876.

It would be interesting to learn the comparable dates when the introduction of these types of shunting were first introduced on a British railway.

Yours faithfully,

F. W. SLADE

[Soon after the opening of the Stockton & Darlington Railway in 1825, shunting was done by gravity at Shildon, and the sidings there were extended as traffic increased until by 1869 they could sort 2,000 wagons a day for 200 different destinations. Tyne Dock, opened in 1859 and for many years the busiest coal shipping place in the country, was designed so that both loaded and empty wagons were moved by gravity on the same principle as hump shunting.—ED., R.G.]

Livery of British Railways

66, Bower Hill,

Epping, March 11

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I notice in your issue of February 20 that locomotives and stock are to be painted in uniform colours throughout the British Isles "because of the intention to make the greatest use of interavailability under nationalisation."

To attempt to achieve this object by a matter of uniform colours is not the way to facilitate the interavailability, as that can be, and is being, done now with the locomotives and rolling stock of various colours; but such interavailability necessitates the approval of the respective regions, not only with regard to axle loads, but also load gauge.

Locomotives and stock painted alike would deprive the man on the spot of a very visual means of detecting stock from other regions, and such oversight may lead to accidents; and I consider the question of repainting existing stock should be deferred.

There would be no objection, however, to all new stock which has been designed for interavailability being painted in a uniform style.

Yours faithfully,

B. P. FLETCHER

Railway Staff Magazines

Frognaal, N.W.3, March 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—One can agree with several of the points which Mr. B. Webb makes in the letter which appeared in your March 12 issue, but deliver us from standardised articles—"syndicated" might be a better term—concocted at headquarters. These articles would savour of the "propaganda" which Mr. Webb rightly says should not come before "staff." Indeed, the ideal magazine should, for the main part, be written by the staff for the staff.

Thirty odd years' experience of the *North Eastern Railway Magazine*, which *The Railway Gazette* helped to start in 1911, shows that there will never be any lack of material. Perhaps articles about a page in length, with ample illustrations, give most satisfaction.

The March number of the *British Railways Magazine* (*Eastern, North Eastern, and Scottish Regions*) is the lineal descendant of the 1911 venture, and is a good sample of an appropriate make-up. It contains articles by an engine driver at Tyne Dock; the Stationmaster at Fraserburgh; a former Stationmaster of Yaxley; a member of the locomotive running staff; a district relief clerk at Norwich; and an officer of the Scottish area who has made a study of our changeable weather and writes about its bearing on railway services. Official contributions are restricted to a series of illustrations of the booking offices at Stratford and Maryland, and a short discussion on the use of films for educational purposes.

The rest of the space is occupied by news of current events.

A few items, necessarily, come from official sources, but the bulk of this matter is contributed by members of the staff interested in retirements and presentations, debating societies, ambulance affairs, safety first awards, and sport.

Subscribers to the magazine especially value a list of staff changes, which to an outsider is a dull record of transfers from one post to another, but enables people in the service to keep in touch with the movements of their fellows.

If regional magazines are left to run on some such lines, without undue interference from headquarters, the staff will regard them as their own journals and value them accordingly.

Yours faithfully,

R. BELL

Railway Station Design

East Sussex. March 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was very glad to read your footnote to the letter from Mr. Parkes in your issue of March 12, and entirely agree with it. There are few experiences more trying than having to wait for a train on a canopy-covered platform either in winter or in other seasons when the wind—and often the rain also—is sweeping along or across it. Even if new stations have to be of the canopy type in future for reasons of economy, at least let us retain the comparatively comfortable and weatherproof covered-in stations we have, such as the principal London termini; York, Carlisle, Perth, Brighton, and others.

I have not noticed any appreciable inconvenience from locomotive smoke at these stations, and—as you rightly imply—Waterloo, Victoria (Central Section), Brighton, and possibly others where there are now few steam trains and likely to be none before long, hardly can be accused of even this disadvantage. We are not all Spartan heroes!

Yours faithfully,

REGULAR PASSENGER

7, Grove Park, Lenzie,

Lanarkshire. March 13

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I am inclined to agree with Mr. Parkes' remarks in the March 12 issue concerning railway station design, because it is my misfortune to have to use what must be one of the dirtiest and most unpleasant stations in the country—Queen Street, Glasgow.

Every outgoing train has to have two engines owing to the Cowairs incline, and so the station is nearly always full of smoke and soot. If, as Mr. Parkes suggests, the concourse were sealed off from the platforms, and the platforms themselves were covered with canopies, the soot would be blown away and the travellers would remain clean.

Of course, if electric traction were used there would not be any soot so, possibly, it would be unnecessary to rebuild the station to a different design; but, as steam engines are likely to be used for many years yet, it would be simpler to reconstruct the stations, thereby giving greater comfort and convenience to travellers.

Yours faithfully,

J. E. BAMBROUGH

2, Woodlands Drive,

Glasgow, C.4. March 13

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Your comments on my letter in the March 12 issue of *The Railway Gazette* have caused me no little astonishment, and it is hard to believe that you mean what you have written.

To begin with, you must be aware that I was not referring to electric traction; and secondly, your choice of examples is unfortunate, because Paddington and St. Pancras are dirty and Liverpool Street is filthy. In a letter from Mr. J. B. Latham, in the same issue, occur the words: "I hope your correspondent is not using Kings Cross or Liverpool Street as his standard of cleanliness." Other examples of dirty, dull, and depressing stations are Glasgow Queen Street (filthy); Glasgow Central; the Exchange, Victoria, and Central stations in Manchester; and New Street, Birmingham (filthy, at least it was before the removal of the roof). Your readers will be able to think of many more.

Platforms are for the use of travellers in boarding and alighting from trains, and not, in the type of stations to which I refer, for hanging about. The concourse is the place for waiting and for doing business, and this should be bright, clean and comfortable—these things it cannot be under the present antiquated design.

Maintenance, about which you make no comment, is a

heavy item of expense, both in labour and material; a great deal of this expense would be eliminated in the design which I have suggested.

Yours faithfully,

G. RICHARD PARKES

[Our correspondents' letters have not altered our views in the slightest. We still prefer roofed-in stations for terminals. Have our correspondents ever experienced what some of the London stations were like when the glazing was removed due to air raids? We do not agree either that Paddington and St. Pancras Stations are dirty; in any event, engines pulling trains out of these stations are usually beyond the roofing.—Ed., R.G.]

Nationalised Inland Waterways

"The Deanery," Stanley,

Falkland Islands, March 6

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The map of the inland waterways of England on page 4 of your issue of January 2, apart from several omissions, contains two very definite errors. The Grand Union Canal is now a broad canal over the whole route from London to Birmingham; also, the Kennet & Avon Canal always has been a broad canal. Among the omissions are the Fenland waterways and some important connecting links between Liverpool, Manchester, and Sheffield.

Yours faithfully,

R. G. R. CALVERT

Collision on Bengal-Nagpur Railway

Bengal Nagpur Railway,

Office of the C.M.E.,

Khargpur, India. March 3

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—On page 433 of *The Railway Gazette* dated October 17, 1947, under the heading "Collision on Bengal Nagpur Railway," a statement has been made that the driver and crew escaped with slight injuries by jumping out of the engine before the collision. From the investigations made by this railway it has been found that the driver and crew never jumped off the engine.

Will you please arrange to issue a correction statement in your paper accordingly.

Yours truly,

N. BAHATI,
for Chief Mechanical Engineer

Capital in British Transport Undertakings

Frognaal. March 22

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—On page 360, column 2, of your March 19 issue, Mr. Alfred Barnes, Minister of Transport, is reported to have said: "It should not be forgotten that this country had £100,000,000 of public money invested in its transport undertakings, and that the railways must always be kept in a state of efficiency."

If Mr. Barnes had said the country had £1,000,000,000 invested in transport that would have been an understatement.

Yours etc.,

R. B.

[The figure of £100,000,000 on page 360 was an error. The Minister was correctly reported, on page 344 of the same issue, as saying "£1,000,000,000."—Ed. R.G.]

RENUMBERING OF BRITISH RAILWAYS LOCOMOTIVES.—A new locomotive numbering system is to be introduced by British Railways. The scheme affects some 20,000 locomotives, which will be dealt with as they pass through the repair shops. Numbers will be shown on the front of steam locomotives, following the London Midland Region practice of a permanent cast-iron plate on the smokebox door. The numbers on cab and bunker sides will follow the existing practice of each region until such time as a standard design of figure is decided on. On the Western Region, however, the number plates on cab and bunker sides will remain, and the numbers of these locomotives will not be altered. The new system will separate steam from diesel, electric, or gas turbine locomotives; and, where possible, the old numbers, or a slight addition to them, will be used. New locomotives built in 1948 and 1949 will be placed in the number group appropriate to the region in which they were designed.

The Scrap Heap

ON THE "LEFT" LINES

Here are some of its salient points [the "Communist Manifesto" of 1848] . . . "Centralisation of the means of communication and transport in the hands of the State." Hurrah for British Railways!—From an article, "What is Communism?" by Colin R. Coote in "The Daily Telegraph."

SPEEDING TICKET ISSUE AT PADDINGTON

Notices have been posted at the booking office windows at Paddington Station, Western Region, asking passengers to tender the odd portions of their fares in silver if possible. This is to overcome the present shortage of silver coinage available for change, and to speed up the issue of tickets during the holiday period. Already the appeal is meeting with success.

CLOTHES FROM U.S. FOR GERMAN RAILWAYMEN

After a recent visit to Germany, the President of the American Railway Conductors' Union, Mr. Harry W. Fraser, made an appeal in the United States for clothes to send to Germany. The appeal states that German trade unionists in the transport industry are desperately in need of clothing, and urges American railwaymen "to comb their closets and attics for all possible items of usable clothing and shoes."

100 YEARS AGO

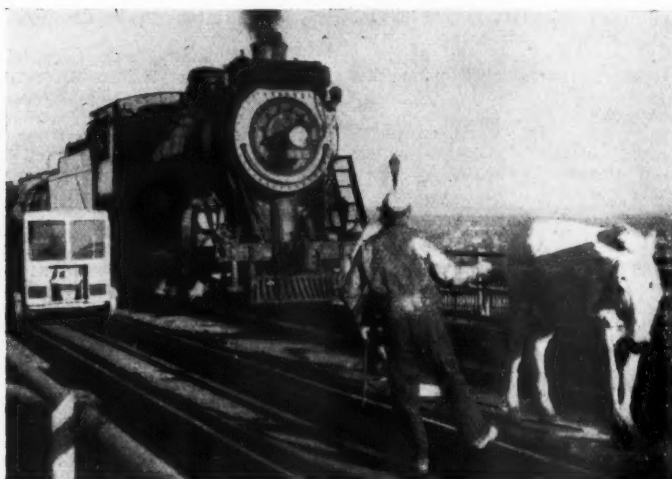
From THE RAILWAY TIMES, March 25, 1848

GREAT NORTH OF ENGLAND RAILWAY COMPANY.—THIRD CALL on the £15 SHARES.—At a meeting of the Directors of this Company, held at Darlington, on Tuesday, the 21st day of March, 1848—

NATHANIEL PLEWS, Esq., in the chair,
It was Resolved—
That a Call of £5 per share be made on the holders of the £15 shares in this Company; which is to be paid, on or before Monday, the 17th day of April, 1848, to the Union Bank, York; or to Messrs. Glyn, Hallifax, and Co., bankers, London.
Interest at 5 per cent. will be charged on all calls unpaid after that day.

J. M. SPARKS, Clerk to the Company.
Railway Office, Darlington, March 21, 1848.

Mule Makes Trains Four Hours Late



Trains on the Huey Long Bridge, New Orleans, were held up for four hours by a mule that baulked on the railway track. Eventually the mule had to be shot

GOOD NEWS FOR ANGLERS

Approximately 10,000 roach and perch have just been introduced into the waters of the Trent & Mersey Canal by British Railways (London Midland Region). The restocking, which took place between Fradley and Kings Bromley (Staffs), is expected to provide good sport for local anglers during the coming season. Anglers wishing to use the canal or to organise contests there should get in touch with the Water Bailiff, Trent & Mersey Canal, Fradley, Burton-on-Trent.

"CIRCUMLOQUESTION" IN EIRE

Mr. D. Morrissey, Minister for Industry & Commerce in Eire, was asked recently to give the Dail information about the salaries and emoluments of the Chairman and General Manager of Coras Iompair Eireann (Irish Transport Company). He replied that the functions of the Minister in regard to the company were set out under the Transport Act, 1944, and he had no function in regard to the remuneration of the Chairman or any other member of the board.

DRIVER WITH "OBSESSIONAL URGE"

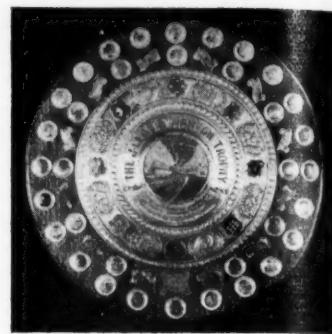
When a driver was charged at Littlehampton on February 15 with stealing 12 half-bottles of whiskey and 3 smoothing planes from the Southern Region, his counsel said that while driving a train three years ago the man had felt the urge to drive through the level crossing gates at Chichester. This he did, and after being suspended he was later reinstated as a driver. A psychologist's report was submitted stating that the driver suffered from an "obsessional urge." The case was adjourned and the driver detained for a medical report.

OH, MR. PORTER!

A correspondent asks what happens to all the newspapers removed from trains by sharp-eyed railways porters. . . . It seems to be a porter instinct. I asked one yesterday if he did it. "Quite often," he replied, "I like to see all the papers if I can."
This no doubt accounts for the gloomy air some porters display.—From the "Liverpool Daily Post."

RECONSTITUTED

The J. Lloyd Wharton Trophy for St. John Ambulance work in the North-Eastern Region has been made anew with the aid of an old photograph, the original having been destroyed during a raid on York Station in 1942. The new trophy,



illustrated above, has been on view lately in York, where the record is held; since the original trophy was produced in the year 1907 the railway carriage works team has won it nine times. A view of York Station is shown on the centre boss of the shield.

LENIN MEMORIAL TRAIN

In connection with the ceremonies held recently in the Soviet Union to commemorate the 24th anniversary of the death of Lenin, a memorial train was unveiled at the Pavletzk Terminus, Moscow, on January 23. The train consists of the passenger locomotive, No. U-127, wholly painted in red, with a carriage (No. 1691) attached. In this carriage Lenin's coffin was brought from Gerassimovskaya to Moscow on January 23, 1924. The train has been accommodated in a special stone building in the station yard close to the Pavletzk terminus in the south of the capital. A bronze tablet attached to the locomotive cab states that it was the one that hauled Lenin's funeral train. The front of the smokebox carries an inscription reading "From the non-party members to the Communists," the locomotive having been presented to Lenin by the workers at the Pavletzk sheds, who had not joined the official Communist party, to mark the sixth anniversary of the change of régime in Russia in 1923.

MY RAILWAYS

One and a quarter million trucks:
It sounds very large and fine,
But only a bit of a wheel or so
Is really mine.

Fifty-two thousand miles of track:
But I'm only a part trustee,
And a fraction less than an inch of it
Belongs to me.

Restaurant sandwiches, horse-drawn vans,
Platforms all posy-grown:
But only a crumb, a hoof, a leaf,
Are mine alone.

Forty-eight million part trustees,
And each to have his due . . .
Can it be wondered I get no seat
To Waterloo?

J. B. B.

[Reproduced by permission of the proprietors of "Punch."

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

VICTORIA

Aerial Survey of Railway Premises

The Victorian Railways administration has carried out recently an aerial photographic survey of about 160 miles of railway tracks, the Melbourne and Flinders Street yards, and workshop areas. The aircraft completed the task, which would have taken months by ordinary methods, in a little over four days.

By adopting aerial photography, it will be possible to undertake many surveys which have been postponed because of shortage of staff. The scale of the photographs is large enough to provide scale plans up to 20 ft. to the inch, and to show clearly all the features usually measured by ground survey apparatus. Each photograph measures about 9 in. by 6½ in. With the aircraft flying at 1,200 ft., the scale obtained is 100 ft. to the inch. The photographs each cover an area of about 900 ft. by 750 ft.

CANADA

New Day Coaches In Service

C.P.R. trains throughout Canada are being allotted 35 modern day coaches from a new equipment order now being delivered. Eighteen of the new steel coaches are assigned to service in Eastern Canada, running between Montreal and Saint John, Montreal and Sherbrooke, Montreal and Quebec, Montreal and Sudbury, Montreal and Winnipeg, Toronto and Detroit, and Toronto and Winnipeg. The remainder of the coaches are allocated to western lines, running between Calgary and Edmonton, Calgary and Lethbridge, and, continuing the transcontinental service, between Winnipeg and Vancouver. It is expected that all the new coaches will be completed by the end of April.

These are the first new passenger coaches on the C.P.R. since October, 1942, although 77 rebuilt vehicles have been put back into service since then. Each of the new coaches is fitted with 68 Sleepy Hollow reclining chairs, which were designed after exhaustive tests involving the measuring of several thousand volunteers.

The vehicles have unusually wide observation-type windows, each with a blind that can be raised or lowered by a touch anywhere along its length. Individually-controlled lights are provided for every seat, and the fluorescent lighting of the car as a whole does away with glare. A new method of heating ensures the walls being warm, the heating units being installed in the base of the side walls, so that warm air rises and enters the cars immediately under the window sills.

UNITED STATES

Santa Fe Skyway Closes

As a result of the decision of the Civil Aeronautic Board not to grant the Santa Fe Skyway interim rights to operate as a common carrier, that undertaking closed down its services on January 15. This company was a subsidiary of the Santa Fe railway system. It began operations on July 31, 1946, and in the eighteen months of its existence more than 2,000,000 aircraft-miles were flown without accident. During the peak period of traffic, in the autumn of 1947, it was carrying goods at the rate of 16,000,000 ton-miles a year,

despite handicaps on economical loading imposed by its being obliged to operate as a contract carrier.

It was found that the status of contract carrier meant that the airway was confined to the transport of goods for a limited number of regular customers, and when part of a load was discharged at an intermediate landing place, it was only on rare occasions that more goods would be available to take its place. On the other hand, the competitors with the airway were operating as common carriers, which enabled them to solicit customers from all parts and at all points of call.

C.T.C. on the Southern

Successful results have attended the inauguration of centralised traffic control on 19 miles of the Southern system between U.S. Junction, Kentucky, and Flatrock. Elimination of delays has enabled the average speed of goods trains over the section to be increased by 5 m.p.h. The section concerned is on the main line between Cincinnati and Chattanooga, and has not been doubled throughout like the rest of the route because it includes eight single-track tunnels and some single-track steel bridges. The single-track sections amount to 14.4 miles in all.

Provision for Inspection Trolleys

Traffic ranges between 40 and 50 train movements daily. A special feature of the installation is that on a double-track section of 4.4 miles, both tracks are signalled for operation in either direction. Special arrangements have been made for the operation of motor inspection trolleys, such as the provision of push-buttons enabling a trolley driver to set up his route, if conditions permit it, and to hold a trolley proceeding in the opposite direction at the other end of the block section.

ARGENTINA

Transfer of British-Owned Railways

The popular rejoicing at the transfer of the British-owned railways to the Government on March 1 was distinguished by an elaborate programme of events, which took place in the Plaza Británica, in front of the Retiro Station of the Central Argentine Railway. President Perón had intended to take the leading part in the proceedings, but was prevented from doing so by illness.

For some days previously, a widespread propaganda campaign had been carried out throughout the country by means of newspapers, magazines, wireless, posters, leaflets, and other printed matter. All stations and other railway buildings were decorated with the national colours, and the Argentine flag was displayed on buildings all over the country. Large crowds, estimated at some 250,000 people, began to gather in the Plaza Británica in the early morning, swelled by contingents from up-country points arriving by special trains.

The ceremony began when Sr. Miguel Miranda hoisted the Argentine flag on a special flagstaff erected for the occasion. The bell of the old Parque Station, long since disappeared, from which the locomotive *La Porteña* used to leave 90 years ago, was sounded, and at 6.55 p.m. the whistle of the veteran locomotive was blown.

This was the signal for all engine

whistles throughout the country to be blown also, as well as ships' sirens and factory whistles, accompanied by the sound of church bells, motorcar horns, and of formations of aircraft of the Argentine Air Force. A firework display concluded the proceedings.

SOUTH AFRICA

Long-Distance Bus Tours

Canadian-built vehicles are being used on the road service recently introduced between Johannesburg and Durban (see *The Railway Gazette* of October 17, 1947). Advanced methods of body building and suspension as used on these vehicles ensure smooth and effortless travel, and there is an almost complete absence of engine noise and vibration. For the present, the buses leave Johannesburg every Monday morning, and complete the return journey on the following Sunday afternoon.

West Rand Electrification

The development of gold mining on the West Rand and in the Western Transvaal necessitated an expansion of railway activities in those areas. Electrification of the lines between Nancefield, Midway, and Bank was decided on some time ago. The work is progressing well, and it is expected that these lines will be opened for full electric operation by the end of July, 1949. The electrification of these sections entails the erection of 10 substations and switching stations, and the cost is estimated at £600,000.

Transport of Petrol by Rail

Only 20 new tank wagons for the conveyance of petrol in bulk were placed in service in 1947, so that greatly increased consumption had to be met by intensifying services and resorting to weekend working. Tank wagons are attached to trains operating to passenger train time schedules, and priority is given to this commodity. In December a new record was established for the transport of petrol in bulk. The total for the month was 20,900,000 gal., as compared with 19,164,000 gal. in December, 1946.

Another record of nearly eight years' standing was broken when 1,399,000 gal. of petrol in bulk were railed from Durban during the week ended January 10, exceeding the previous record in April, 1940, by 30,000 gal.

INDIA & PAKISTAN

Closer Liaison Between Labour and Government

At a recent meeting between the Railway Board and the All-India Railwaymen's Federation, it was arranged that representatives of the federation will be associated with the board for dealing with matters relating to the implementation of the Central Pay Commission's recommendations. The commission was appointed last year and reported on the new wage scales for railwaymen of all categories, and other Central Government employees.

At the same time the A.I.R.F., which is a representative body, having as its constituents all the railway employees' unions in India, has decided to bring about an important change in its composition. So far, the majority of its chief executive has been political, but in future will consist of serving railwaymen. This change is expected to give more weight and authority to the A.I.R.F. in its dealings with the Railway Board.

Automatic Acceleration of Traction Motors

A survey of the circuits and functions of accelerating relays used in various types of electro-pneumatic and all-electric control

By B. J. Prigmore, M.A., A.M.I.E.E.

THE principles of multiple-unit control equipments were enunciated and put into practice by F. J. Sprague before 1900, his original equipments consisting mainly of a drum controller operated by a pilot motor. Not long after this, at least as early as 1903 in England, multiple-unit equipments for motor coach trains were arranged for automatic acceleration. With these equipments, direct movement of the master controller handle to the full parallel position was possible. Rapid short-circuiting of the starting resistances was prevented by a current relay (sometimes then called a "throttle relay"), which delayed the successive events of the control sequence until the motor current had decreased to the value at which notching was required to take place.

The accelerating relays are current relays of various forms, arranged to permit or initiate action when the current in the motor circuit in which they are connected decreases to the notching value. The magnetic flux due to the current relay coil then has decreased sufficiently for some portion

schemes in which the accelerating relay on each motor coach controlled its associated equipment; each equipment thus acted individually, and train acceleration was possibly a little more smooth. One of the earliest examples of an equipment of this individually-accelerated type (shown in Fig. 1) is that used on the original stock of the Mersey Railway. In this system, each motor coach is accelerated by means of a large drum controller, moved forward notch by notch under the action of an electro-pneumatic pawl-and-ratchet mechanism. Forward movement of the pawl piston causes the repeater switch contacts

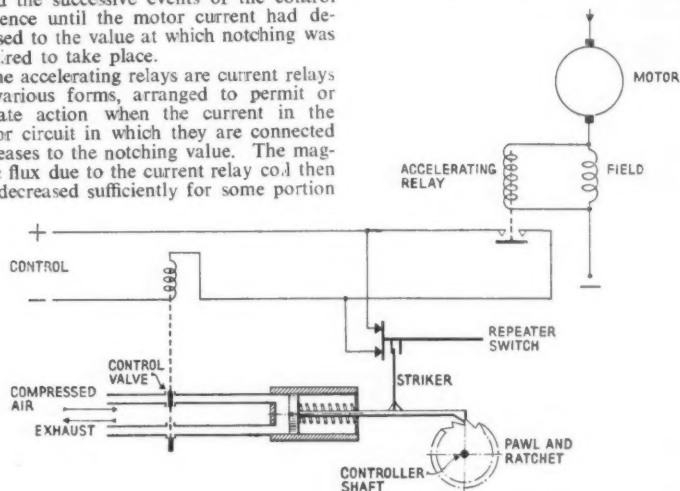


Fig. 1—Early scheme for individual acceleration of motors

of the relay to be released. This portion, in acting, causes the next notch in the control sequence to be made; this happens every time the current decreases to the notching value until, after from 12 to 20 moves, the accelerating sequence is complete.

An early type of current relay acted directly on the master controller drum. In the equipment in which it was used, movement of the master controller handle merely wound up a spring tending to pull the controller drum round after the handle shaft. The drum was prevented from moving by a form of magnetic clutch, which was released, permitting a one-notch movement of the drum, each time the motor current decreased to the notching value. With this equipment, acceleration of the whole train depended on the action of the accelerating relay on the front motor coach, corresponding contactors on all train equipments closing in unison.

Another control equipment in which the accelerating relay in the front motor coach acts on the master controller and controls the whole train is that on the trains operated by the L.M.R. in the London area. The master controller is fitted with an electromagnetic pawl and ratchet device which is caused to act each time the current relay operates, and moves the master controller drum one notch forward.

Meanwhile there were developed also

to open (a striker arm acting on the repeater switch). Air being exhausted from the operating cylinder, the pawl is returned by a spring, and on its return closes the repeater switch contacts, so energising the control valve coil and giving another stroke to the pawl by again admitting air to the cylinder.

The accelerating relay is closed by high currents, and then short-circuits the repeater switch. This results in the pawl being held forward until the motor current has decreased. The relay contacts then open, air is exhausted from the cylinder, and the pawl returns, only to give another stroke on closure of the repeater switch contacts.

An accelerating relay with contacts which open at notching current, as on this one, is unusual; moreover, this particular relay is not a true traction current relay, but a low-current relay placed across the negative motor field, which acts as a shunt to it. By this means it is ensured that only low voltages and currents are brought near the control circuits, which themselves operate at only 14 volts.

This type of relay has its armature (or plunger) released when the motor current decreases to the notching value, and, as with all the simpler relays, has its armature reset by the increased current which results from the making of a control notch. Since this current increase is not a large fraction

of the average motor current, the relay must be relatively sensitive.

Sensitivity is obtained by the use of a fairly large air gap in the magnetic circuit. Since the gap flux is roughly inversely proportional to the gap width, the maximum permissible fractional change in the gap length on relay action is only about the same as the fractional change in current, whilst it will of necessity be less if reliable relay action is required. This, in turn, means a large gap if ample parting of the contacts is to be obtained on relay action, and this feature restricts the use of such a relay, if it is not to be of large dimensions, to equipments requiring a low control power and having reasonable fractional current increments on notching (such as are not obtained on multi-notch equipments).

The conventional current relay of this type has contacts which make when the armature is released. Such a relay is used on many electro-pneumatic contactor equipments. In these, shown in essentials in Fig. 2, closure of the current relay contacts energises an "accelerating wire," to which is connected a contactor coil. This contactor closes, transfers its operating coil to an energised "retaining wire," thus holding itself closed despite the current relay contacts having opened; and also connects the operating coil of the next contactor in the sequence to the accelerating wire, ready for the next closure of the current relay contacts. These have opened meanwhile as a result of the current increase consequent on closure of the first contactor.

Decrease of Relay Setting

Arrangements often are made on this type of relay, as also on others, to decrease the setting (hence the notching current) when the parallel notches are being made (this reducing the maximum demand on the power supply system). This is done by the addition of a voltage-energised coil, energised only when the parallel line-contactors are closed. The ampere turns of this coil aid those of the main current coil. This addition results in the armature being released when a smaller main current flows.

On equipments for which appreciable control powers are required (as on electro-magnetic contactor equipments operated at

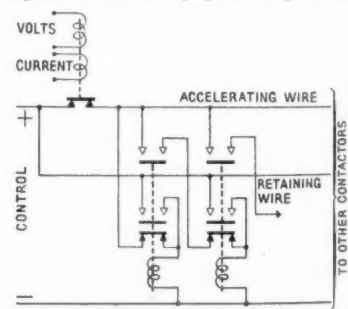


Fig. 2—Current relay in contactor circuit

line-voltage), or on multi-notch equipments (in which only a small fractional increase of main current occurs on notching), it is customary to use current relays constructed so that, whilst armature release takes place as usual at the notching current, other means are used to reset the relay as each notch is made. The armature is held readily in place, though not pulled there, by the post-notching current.

On an all-electric cam-contactor equipment the current relay is mounted by the camshaft, and its armature is reset by a cam projection each time the camshaft moves from one position to the next. Camshaft movement is initiated, of course, by release of the current relay armature.

On an electro-pneumatic cam-contactor equipment (the scheme of which is shown in Fig. 3) the current relay contacts close, operating a magnetic lock on the camshaft, when the voltage coil (added to the current relay) is energised by an auxiliary

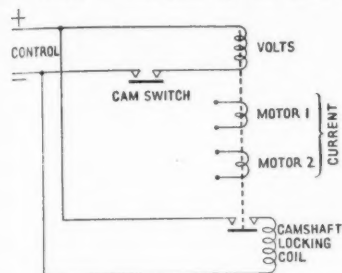


Fig. 3—Operation of camshaft lock by mechanical cam switch

switch operated by the camshaft each time it approaches a notch position. On release of the current relay armature, the camshaft is released and thus permitted to move one notch forward.

The current relay just mentioned has two current coils, one in the circuit of each motor. This means that although resistance is cut out alternately first from one motor circuit, then the other, on successive parallel notches of the camshaft, the current relay experiences an ampere-turn increment on each parallel notch, and hence properly controls the movement of the camshaft. Conventional relays, which have a current coil in the circuit of one motor only, tend to close the parallel contactors in pairs, with a very short time delay between the members of each pair.

The Two-Leg Relay

The type of accelerating relay most used in England since its introduction on all-electric electromagnetic contactor control equipments in 1916 is called the "two-leg" relay. This relay has a double magnetic circuit and two plunger-type armatures, as shown in Fig. 4. Around each side limb is wound a voltage-energised coil, whilst around the centre limb is wound the current coil. The magnetomotive force due to an energised voltage

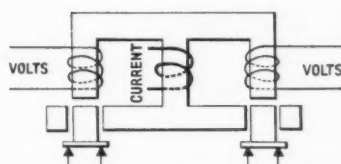


Fig. 4—Two-leg relay

coil causes flux lines round its limb only; the gap flux attracts the plunger and only that plunger lifts.

The magnetomotive force due to current in the current coil causes flux lines round both flux paths. Since the flux in each path is very roughly inversely proportional to the air gap in each path, it follows that if one plunger is raised so that its air gap is small, the gap flux due to the current coil will be large, and the plunger will be held up until, due to reduction in the motor current flowing, the gap flux decreases and (at notching current) the plunger falls. However, the magnetic circuit of the other plunger will have such a large air gap that very little flux will cross the gap and that plunger will remain down.

To the actual two-leg relay, air dashpots are often fitted so that there is a small definite time delay between the lifting and releasing of the plunger irrespective of the motor current flowing; if this latter should be in excess of the notching current, then, of course, plunger release depends on the current, not on time.

The form of control circuit used with the two-leg relay is shown in simplified form in Fig. 5, in which the contactors close in order from left to right. The two accelerating wires, *aa* and *bb*, used alter-

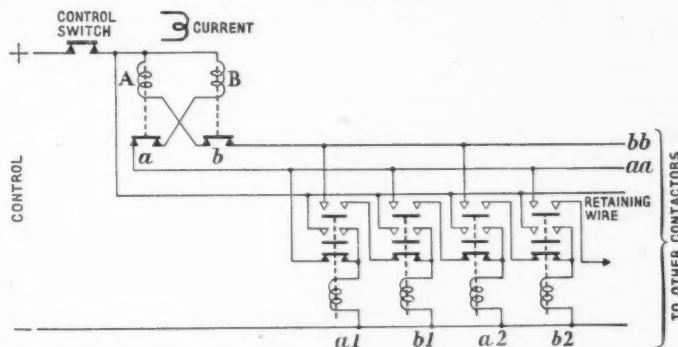


Fig. 5—Control circuit connected to two-leg relay

nately, are in series with the relay contacts *a* and *b*, and the voltage coils *B* and *A* respectively. On closure of the control switch, contactor *a1* closes, connects its operating coil to the retaining wire, and connects the operating coil of contactor *b1* to accelerating wire *bb*, which wire has just been cleared by the closing current of *a1*, which was drawn through voltage coil *B*, thus causing opening of contacts *b*.

On decrease of motor current to the notching value, contacts *b* close, so contactor *b1* closes, its closing current (through coil *A*) clearing *aa*, to which *b1* connects the operating coil of *a2*. The sequence progresses in a similar manner.

The current coil is in the circuit of only one of the traction motors. However, when the motors are in parallel, there is still a small time interval between the closure of successive contactors of a pair (which in the normal way would close in rapid succession, the first of the pair cutting resistance out of the motor circuit not containing the current coil) owing to the air dashpot previously mentioned as being fitted to the plungers.

Some control equipments introduced recently depend on a motor-driven multi-step rheostat for maintaining the motor current constant during acceleration. In this case the current relay is part of the master controller, and acts against a manually-set spring. The acceleration to be obtained is a function of the spring setting, hence a variable-performance automatic controller is obtained. The current relay armature controls the speed of the rheostat motor, being arranged so that the motor revolves more rapidly should the current tend to decrease. Thus, by cutting out resistance at an increased rate, the tendency of the motor current to decrease is counteracted.

BELGIAN ELECTRIFICATION PLANS.—The electrification projects of the Belgian National Railways (see our March 3 and August 15, 1947, issues) have been extended to cover some 930 route-miles. Expenditure, estimated at present-day prices, will amount to fr. 13,500 million (approximately £76,271,000). The whole conversion is to be completed by 1960, and the first section to be converted within the framework of this programme will be the 34.8 miles of the Brussels Midi—Charleroi main line. In 1947 fr. 250 million were spent for conversion work on that line. The next sections to be taken in hand are Brussels Nord—Liège (62 miles); Brussels Nord—Ostend (75.8 miles); and Brussels Nord—Namur—Arlon (123 miles). An expenditure of fr. 6,200 million (approximately £35,028,200) is estimated

for electric locomotives, motor coaches, and railcars. Sixty electric express locomotives and 305 mixed traffic locomotives will be required, in addition to 235 motor coaches and railcars.

ELECTRIC LOCOMOTIVES FOR THE SOVIET UNION.—In connection with the rapid expansion of main-line electrification in Russia, the number of electric locomotives is to be increased greatly. The programme set within the framework of the present Five-Year Plan (1946-1950) aims at 555 new electric locomotives of the "VL-22m" series, an improved version of the "VL-22" type. In addition, a few experimental locomotives of a still more powerful type are to be built. Between 1932 and the end of 1947, Russian locomotive works supplied some 200 electric locomotives, including 40 of the "VL-22" class.

Every endeavour is being made to complete the programme by the end of 1949, instead of 1950, and the employees at the Kharkov locomotive works recently pledged themselves to turn out in 1948 double the number of electric locomotives programmed.

CONVERTING THE FLORENCE-PISA LINE.—Electric traction was introduced on the 21.1-mile Florence-Empoli section of the Florence-Pisa line on January 16. It is expected that the 29.2 miles from Empoli to Pisa will be converted early this summer. The Florence-Pisa line, which was steam-worked before the war, suffered heavy damage during the fighting in the Florence region. As a temporary measure the line was restored for single-track working, but in the course of electrification it is having its second track replaced.

Electrification in Warsaw

The city line and adjacent suburban sections described in a recent paper to the Institution of Electrical Engineers

INCREASING traffic and congestion at the original seven main-line termini in Warsaw led to plans for a reorganisation of traffic being drawn up in 1921. These provided for combining the lines into two groups, one entering Warsaw from the east and the other from the west, and connecting them by a new city line, partly in tunnel. Financial difficulties prevented completion of the scheme, but the city line was built, although with two tracks instead of four. It was electrified throughout, together with the adjacent suburban sections, the whole totalling 65 route-miles.

An account of the electrification has been given recently in a paper read to the Institution of Electrical Engineers by Mr. J. Podolski (see also our March 5 issue). He mentioned the serious damage to the system during the war, and said that only one 15-mile section had been reconstructed so far.

The electrification was carried out by the Metropolitan-Vickers Electrical Co. Ltd. and the English Electric Co. Ltd., the contract having been placed in 1933, and completed by May, 1938. The first electrified section was opened for public service at the end of 1936. Power was supplied to the trains at 3,000 V. d.c. from an overhead line, being taken through six mercury-arc rectifier substations from a 35-kV. feeder system connected to the two main power stations in the city. Five of the substations were arranged for semi-automatic operation and remote control by unskilled staff. The sixth had an attendant permanently on duty, although its operation also was semi-automatic.

Overhead Contact Line

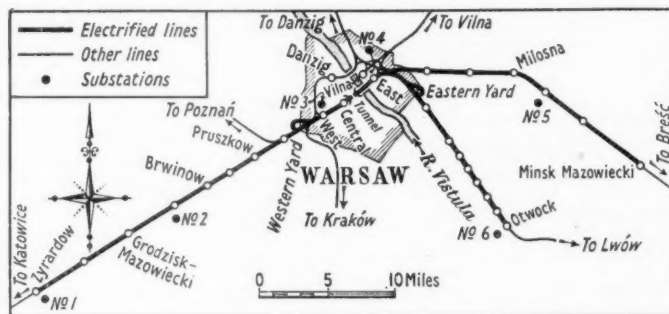
The overhead contact line was sectioned in the vicinity of each substation, each section being supplied from a separate feeder, protected by a high-speed breaker. Further sectioning of the line was effected at six track cabins situated approximately half way between the substations. These had two pairs of breakers, one pair for each track, connected in parallel by a common busbar; and arranged to operate on return current only.

Automatic tensioning was adopted both for the overhead contact wire and the catenary, on account of the wide temperature variations which had to be provided for. On the main tracks, the wires were in independent lengths of about 1,300 yd., every section being connected at each end to a cast iron weight through a set of pulleys, turnbuckles and insulators. At the tensioning points, the sections turned away from the track and were raised, and for a few feet before this occurred they ran parallel with the conductors of the adjacent section to ensure continuity of supply to the pantographs. Copper jumpers across the overlapping portions connected the sections electrically, but approximately every two miles, and at the ends of stations, the connection was made through isolating switches.

In the tunnel section of the city line, the catenary was supported by cross wires located in transversal recesses in the vault, and the contact wires were spring-tensioned. The longitudinal suspension of the wires was maintained, but the spans were reduced greatly to decrease the sag of the catenary. On open air sections, the

normal span was 237 ft., with a reduction on curves.

Six Bo-Bo locomotives were supplied in the original contract for hauling long-distance passenger trains on the city line. Later, four light locomotives for shuttle services were constructed, using motor coach equipments. The larger locomotives were equipped with four nose-suspended, force-ventilated series motors, driving the axles through shock absorbing gears. Each motor had a continuous rating of 465 h.p. at full excitation. The gear ratio was 22:69, and the driving wheel diameter



Electrified lines in Warsaw and suburbs

48 in. Both electro-pneumatic and manual controls were provided, the master controller having 13 series and 12 series-parallel starting notches. A separate handle controlled three weak-field steps. Thus the locomotive had 8 running positions, i.e., full series and full parallel, each with 3 weak-field positions. The maximum operating speed was 68½ m.p.h.

Auxiliary services were supplied from two motor-generator sets giving an output of 110 V. d.c. Two 110-V. d.c. series motors operated a pair of reciprocating compressors for the braking system, and the heating and lighting circuits of the locomotive were supplied at 110 V. from the motor-generators in conjunction with a floating battery.

In the lighter locomotives, standard motor coach equipments were mounted on locally-manufactured bodies. They differed little from the motor coaches, except that two compressors were provided instead of one, a larger gear ratio was used, and the starting resistors were rated for longer acceleration and frequent shunting. These locomotives had a maximum speed of 40 m.p.h., as they were intended only for shuttle services on the city line.

The suburban trains consisted of 60 units comprising a motor coach coupled semi-permanently to two articulated trailers, with driving positions at both ends. Trains were made up of one, two, or three units coupled together and controlled from the leading driver's cab. A further 16 units supplied by the end of 1938 had two driving positions in the motor coaches. The trains had a maximum speed in normal service of 53 m.p.h. Each unit weighed 113 tons and seated 262 passengers.

Series motors of 144 h.p. were mounted on the bogies, driving the axles through spur gearing without shock absorbers. The gear ratio was 21:74. Control, apart from

the electro-pneumatic line-breakers and the reverser, was all-electric, the contactors being operated mechanically from a cam-shaft driven by a pilot motor; or they could be operated manually under the protection of a current-limit relay. There were five series and four series-parallel resistance starting notches, and four running positions, namely, full series, full-field; series-parallel, full field; and two series-parallel notches with weakened field.

The resistors, battery, motor-generator, and compressor were mounted on the underframe. All the rest of the electrical equipment was installed in two high-voltage compartments inside the coach behind the driver's cab. It was accessible either from inside the coach through doors interlocked with the main isolating switch, or from outside after opening doors in the side panel.

Power at 110 V. d.c. was supplied for the control, lighting, and compressor circuits from a motor-generator set operated through a resistor direct from the line voltage. A battery of 50 a.h. capacity floated across the generator.

The trains were heated by d.c. at 3,000 V., the heaters being rated for 750 V., and connected four in series. Each motor coach had 24 heaters of 700 watts, and each trailer 32 heaters of a similar rating. They were divided into two separate circuits, each protected by a high-voltage fuse, and controlled by individual switches in the driver's cab. In addition, one circuit had individual control for each heater by means of thermostats. This circuit was switched on only during heavy frosts, as normally one circuit was ample to maintain an average inside temperature of over 50° F.

The two 3,000-V. buslines feeding the heater circuits of the unit were carried from coach to coach by flexible jumpers between roof connection boxes, which provided a common housing for the heater circuits and for the multi-core cable of the multiple-unit control system.

In the period between opening the electrified service and the outbreak of war, the total mileage run by multiple-unit trains reached 8,000,000. Certain troubles were experienced during this period, of which the most severe were breakdowns of traction motors. They were found to be caused by fine snow entering through the ventilating ducts, being drawn in to the traction motors, and melting. In a motor coach the ducts for one pair of motors were in the roof, and for the other in the side wall, and the motors ventilated in the latter manner were found to be the more seriously affected. All the air inlets were sealed as a temporary remedy, and this was not found to be detrimental on account of the low ambient temperature. The proposal to take

(Continued on page 377)

Notes on the Brighton Electrics in 1947

Comparing gross and net times for all journeys made by non-stop or equivalent trains in 1947 with those in 1946

(By a Correspondent)

IN *The Railway Gazette* of March 28, 1947, there appeared some notes by the present writer on the Brighton Electrics in 1946. As they seem to have been appreciated in some quarters, others covering 1947 are given below. This time they deal not only with up non-stop workings, but also down, both non-stop and the 4.45 ex-Victoria, which has similar or even faster intermediate schedules. All journeys made by the writer with these trains are included, irrespective of weather and other conditions, except two up and two down altogether abnormal ones during the very bad weather in the Spring. For reasons fully explained in the 1946 notes, there is no differentiation between various train compositions and loads.

Considering up non-stop workings first, only one run was made without a single out-of-course delay, as in 1946, such delays being caused by signal checks or stops and engineering restrictions not published in the working timebook. On 68 per cent. of the up journeys the trains were diverted from the main to the local line at Coudsdon North, as against 83 per cent. in 1946; this diversion and the reduced speed necessitated by the curvature of the local line at East Croydon causes delay averaging fully one minute. All up schedules are 60-min.

Comparative Journey Times

The following table shows actual overall gross times taken, whether affected by out-of-course delays or not. Similar records of down non-stop workings and carefully-estimated net equivalents, allowing for out-of-course delays, are given also for the sake of comparison:—

Non-stop overall results (50.9 miles)	Up		Down	
	1946	1947	1946	1947
Average gross journey times ...	60 29	60 31	59 05	
Average net journey times ...	55 45	56 09	54 39	
Percentage of trains taking (gross)				
60 min. or under ...	54	40	57	
60 to 61 min. ...	17	24	14	
61 to 65 min. ...	26	32	29	
Over 65 min. ...	3	4	0	

The number of punctual arrivals at Victoria (indicated by 60-min. or under times) was slightly less satisfactory in 1947 owing to the bad weather conditions affecting up trains mainly in the London area. The percentage of trains less than 5 min. late was practically equal in the two years, 97 and 96 per cent., an excellent record. In the down direction, 1947 results were even more striking as no trains took over 61½ min. gross, or were more than 1½ or 3½ min. late according to the 60- to 58-min. schedules. Incidentally, no train took over 60 min. net in either direction, and the fastest net times were 52 min. 38 sec. up and 53 min. 51 sec. down.

Still more spectacular are the net figures for the East Croydon-Haywards Heath 27½-mile start-to-stop run of the 4.45 p.m. ex-Victoria. During the first half of the year the schedule was 30 min., and subsequently 29 min. Against the former the average net time was 28 min. 35 sec., and against the latter 27 min. 32 sec., or almost exactly even time start to stop. The fastest net time was 27 min. 4 sec. Emi-

nently satisfactory as are these results, they are eclipsed by an up run in 1948 giving a Brighton-Victoria net time of 51 min. 48 sec. and two 4.45 p.m. net times of 26 min. 34 sec. and 26 min. 38 sec. for the 27½ miles from East Croydon to Haywards Heath.

With so many runs for comparison, the estimation of net times is precise. To eliminate even the slightest inaccuracy,

Section times were calculated hitherto only as far as East Croydon in the up direction, for reasons explained in the 1946 notes; in 1948 they are being calculated throughout.

Incidentally, the figures in this second table show that, if anything, the net times, estimated by analogy with similar runs, err slightly on the large or safe side. For instance, 1947 average down non-stop workings give an estimated net time of 54 min. 39 sec., and a net calculated from the section times of 54 min. 34 sec. Corresponding figures for the 4.45 are 28 min. 9 sec. estimated and 27 min. 48 sec. calculated.

A general survey of all the figures above



Southern Electric "Brighton Belle" multiple-unit all-Pullman train

(Photo)

[O. J. Morris]

however, the Victoria-Brighton length has been divided into 17 sections and the running times for each tabulated for all trains, omitting all section times affected by out-of-course delays. In this way the net average journey time is calculated as the sum of the average section times. The sum of the fastest section times also indicates reasonably possible overall times with a clear road, in everyday working.

AVERAGE NET AND POSSIBLE JOURNEY TIMES

(Based on section times unaffected by out-of-course delays)

	1946		1947	
	Min.	Sec.	Min.	Sec.
Victoria-Brighton (50.9 miles):				
Schedule	58	or 60		
Various non-stop trains, mostly 12-coach				
Sum of average section times...	55	03	54	34
Sum of fastest section times...	52	01	51	20
4.45 ex-Victoria: Usually 12-coach E. Croydon-Haywards Heath (27.5 miles): Schedule ...	30		30 & 29	
Sum of average section times...	28	40	27	48
Sum of fastest section times...	27	27	26	55
Brighton-Victoria non-stop trains Brighton to passing Quarry Summit (33.4 miles)				
Sum of average section times...	33	48	33	59
Sum of fastest section times...	30	40	31	27
Brighton to passing E. Croydon (40.4 miles)				
Sum of average section times...	41	29	41	20
(a) 42 14			42	23
Sum of fastest section times...	37	02	38	25
(b) 37 56			38	55

* (a) The comparatively few trains not diverted at Coudsdon North from the main to the local line, and (b) the great majority so diverted.

makes it clear that a consistently high standard of work is being maintained, with little variation between the average times for the two years, and not much between the average and fastest times. In fact, it is remarkable that the 1946 and 1947 average gross journey times in the up direction should differ by only 2 sec. The excellent net figures are a tribute to the motormen in making up time lost due to unforeseen delays. Finally, it should be mentioned that these notes cover a wide range of trains, including the 11 a.m. "Brighton Belle," and the 4.45, 5.25, 6, and 6.30 p.m. down; and the 9.35 and 11.25 a.m. and the 1.25 and 5.25 p.m. "Belles" in the up direction. About 80 trains in all have provided details for analysis and comparison.

Electrification in Warsaw

(Concluded from page 376)

ventilating air from inside the coaches was being investigated at the outbreak of war.

In conclusion, Mr. Podoski remarked that the Warsaw electrification was one of the first large-scale suburban schemes undertaken by the British electrical industry at 3,000 V. d.c. He expressed his thanks for assistance and information supplied in connection with his paper by the English Electric Co. Ltd., the Metropolitan-Vickers Electrical Co. Ltd., and British Insulated Callender's Cables Limited.

L.M.R. Pre-cast Concrete Production

Cost of production of concrete components, weighing up to 25 tons, has been reduced by establishment of a central pre-cast depot at Newton Heath



Storage area served by the 10-ton crane at Newton Heath, showing pillars and beams cast at the depot

THE use of pre-cast concrete units on the L.M.S. Railway developed rapidly during the 20 years preceding nationalisation. While part of this increase was due to wartime shortages of materials, the inherent merits of this form of construction, with its low first and maintenance costs, have been largely responsible for the expansion. In the London Midland Region most of these units are manufactured in the former L.M.S.R. depot at Newton Heath, Manchester, but when the demand exceeds the capacity of the depot, or when special work on a large scale, such as renewal of engine shed roofs, is undertaken, orders are placed with concrete manufacturers. Bridge units, however, are always manufactured in the depot, since outside manufacturers do not usually possess handling facilities for this type of unit, which may weigh as much as 25 tons.

The pre-cast concrete depot at Newton Heath was established in 1937 to replace

three smaller depots which were working to full capacity. It was considered that the further production required could best be obtained from a new central depot, the output from which would justify considerable mechanisation. To obtain the quality of concrete required modern methods of controlling the mix were installed and the layout was designed so that casting could be carried out under cover, thus permitting uninterrupted production under all weather conditions.

A survey of possible sites where covered accommodation was available showed that the former carriage and wagon shops at Newton Heath, Manchester, would be suitable and would allow room for expansion. This site also had the advantages that labour was available in the area and that all parts of the system could be reached by rail from Manchester.

To facilitate full control of the mix a new procedure was adopted by which con-

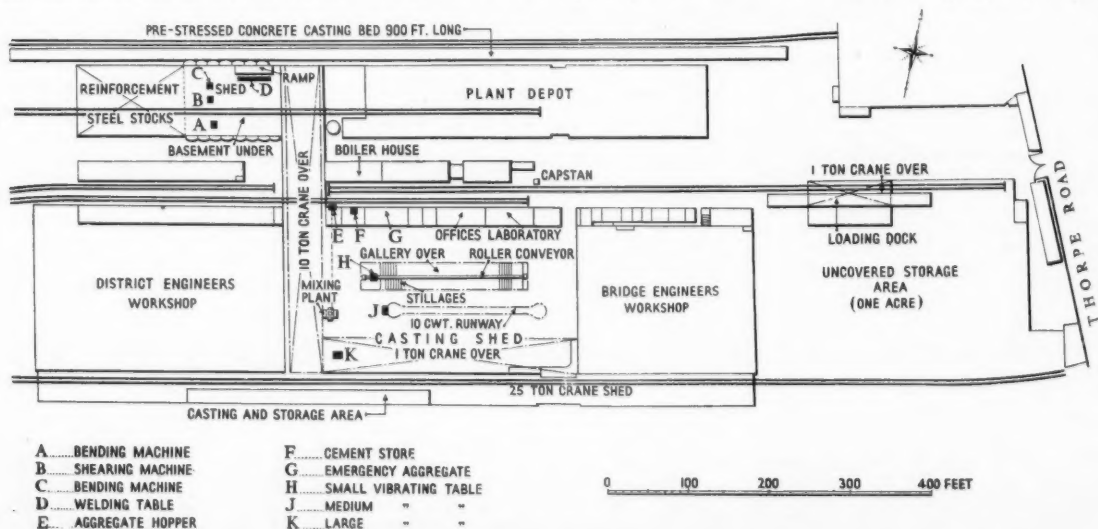
crete is distributed to the various casting areas from a central mixing plant. To reduce movement of concrete and to enable maximum possible use to be made of the covered space, the filling of the moulds is carried out at fixed points; after filling, the moulds are moved to areas where they can be stored until the concrete is sufficiently matured for stripping. In this way maximum use is made of the space available, as the filled forms can be stacked closely, circulating space between them for filling not being required. Economy in use of space has also been obtained by arranging for all materials to move through the shop in straight lines, thus avoiding conflicting movements.

Nearly all the reinforcement used is fabricated in a building 250 ft. by 85 ft., known as the reinforcement shop. The stocks of bars are located at the incoming end of the shop and are moved along roller conveyors to be cut to length and bent on either of two power-operated bending machines, capable of dealing with material up to 2-in. dia. The bent bars are then assembled at the outward end of the shop, the smaller units being electrically welded. A six-unit welding transformer is provided and welding is largely carried out by female labour. The heavier assemblies, such as those required for large bridge units, are connected by wire ties, and the complete assembled units are transported direct from the reinforcement shop to the casting shop, to be placed direct in the forms without any further fabrication.

The Main Casting Shop

All operations connected with casting are carried out either in the main, centrally-heated, casting shop (360 ft. by 170 ft.) or the adjoining building. The central batching plant situated approximately in the centre of gravity of the using points provides the concrete required. The sand and crushed stone aggregate are discharged direct from wagons into the hopper of an inclined belt conveyor, which delivers these materials to the overhead bins. The cement is discharged direct from the wagon into the cement store, where the bags are emptied as required into a hopper, whence the cement is conveyed to the mixers through a worm screw conveyor.

All materials are gauged by weight and



Plan of the pre-cast concrete depot at Newton Heath

can be delivered into either of two mixers, each with a rated capacity of 10 cu. ft. mixed. The concrete is discharged from the mixers into a battery-driven elevating truck, which transports it to the point required and discharges at any desired height.

There are four main manufacturing areas in the casting shed, together with an adjoining area served by a 25-ton overhead travelling crane. The first area deals with small articles up to about 2 cwt., which are cast on a small vibrating table, 6 ft. 0 in. by 3 ft. 6 in. The full moulds are then moved down the shop on a roller conveyor, from which they are moved transversely to an appropriate space on fixed stillages at the same level. To increase output at this point a power-driven slat conveyor will shortly replace the roller conveyor. The full moulds are stacked as closely as possible on the stillages. When the concrete is sufficiently hard to be stripped the units are transferred from the fixed stillage on to a portable stillage, the stripped forms being moved back on to the conveyor. The portable stillage on which the concrete units are stacked is then picked up by a battery elevating truck and transported to the outside stacking area, where the units complete their curing before despatch. The stripped forms, on being returned to the conveyor, travel to the end remote from the vibrating table, and are then lifted to an overhead gallery where they are cleaned and stacked, or, if required for production, are re-assembled and travel down a conveyor in the reverse direction, being finally lowered to the vibrating table ready for re-use when required.

The second casting area deals with units weighing between 2 cwt. and 10 cwt. and all units are cast on a larger vibrating table (8 ft. 0 in. by 3 ft. 6 in.). After casting, they are removed from the vibrating table by an overhead monorail which transports the full forms to a point on the floor or a vertical stillage, where they remain until stripped. The stripped units are loaded on to portable stillages, which are hauled to the stacking area by the battery truck.

Units weighing between 10 cwt. and 1 ton are cast in the third casting area, which is provided with a 1-ton underslung jib crane of 40-ft. span. Most of these units are cast on a vibrating table, 10 ft. 0 in. by 4 ft. 6 in., and when completed are lifted by the overhead crane, which lowers them to the floor for curing. Units which cannot be handled easily on the table are cast on the floor.

All units weighing between one and ten tons are cast on the floor underneath the 10-ton overhead crane, which has a 40-ft. span and runs transversely across the shop. The floor area underneath the main shop roof is used for casting, and completed units are stored in the extension of the runway which passes in front of the reinforcement shop. As units cast in this area are for special jobs and are held for only a short time in storage, minimum handling is required, and they can be loaded direct to wagons by the crane.

Bridge slabs and similar units weighing more than ten tons are manufactured in the adjoining area, where the whole of the casting space is covered by a 25-ton overhead travelling crane. The units are cast on the floor and, when cured, are moved to an adjacent stacking position where they can be craned direct to wagons when required. All units cast on the floor are vibrated by internal or external vibrators.

Units which can be handled by stillages and trucks are moved for final curing



View of central mixing plant discharging concrete to an elevating truck, with medium vibrating table in foreground

and storage to an outside storage area of approximately one acre. Transfer to wagons is carried out by reloading stillages, which are transported to a loading dock where a 1-ton overhead crane lifts the units direct from stillage to wagon. Units weighing more than one ton are handled direct to wagons by the overhead cranes in the area in which they are cast, but the 1-ton underslung jib crane can load direct from its area into wagons in the siding underneath the 25-ton crane.

All timber forms used in the depot are manufactured in the adjoining district engineer's shops, but a separate form shop for the depot is to be set up as soon as wood-working machines are obtainable. Steel forms are used for standard units when the design has been finalised, but normally pre-cast concrete forms are not in use because of their weight and the fact that filled moulds have to be moved during manufacture.

Capacity and Output

The present capacity of the shop is 8,000 cu. ft. of concrete per week, but, because of staff and material difficulties, this figure has not yet been reached, the maximum output being just short of 6,000 cu. ft., of which normally about 60 per cent. is in small articles weighing under one ton.

The depot is directly under the control of regional headquarters and immediate supervision is under a superintendent, who has two technical assistants. The immediate shop supervision is under a general foreman who has two sub-foremen, one in charge of the steel reinforcement shop and the other in charge of loading. A charge-

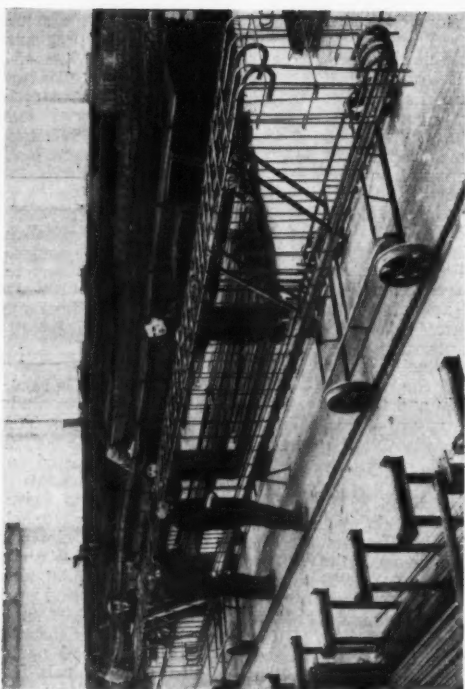
hand is responsible for the actual casting in each of the main casting areas. The total staff at present numbers 154.

Applications of pre-cast concrete units in L.M.R. engine shed construction were illustrated in our issues of January 30, 1948, and November 7, 1947.

ANNEALED STEEL WIRE FOR OIL HARDENED AND TEMPERED SPRINGS.—The British Standards Institution has published B.S. 1429:1947 for annealed steel wire for oil hardened and tempered springs (for general engineering purposes). Copies are available from the Institution (Sales Department), 24, Victoria Street, London, S.W.1, price 2s. each.

CHANNEL TUNNEL PROPOSALS.—French and British parliamentary study groups dealing with the Channel Tunnel project met at the House of Commons on March 16 and passed a resolution urging the Governments of Great Britain and France to give serious consideration to such a tunnel in any plans for permitting a closer union of their two countries and of Western Europe. It was suggested that a pilot tunnel could be constructed over a period of five years at an annual cost of £1,000,000 to each Government. Before the meeting, British and French engineers had agreed that a system of two main tunnels for railway traffic only, as approved by the Channel Tunnel Committee in 1930, could be constructed at a cost between £45,000,000 and £65,000,000, but that it was essential to drive an exploratory tunnel before undertaking the major project.

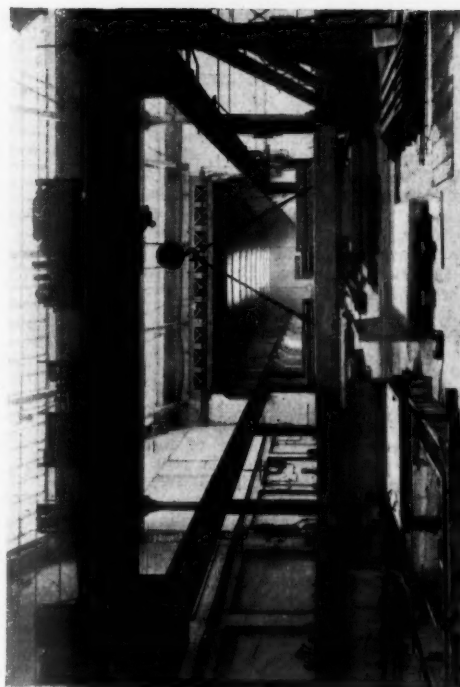
L.M.R. Pre-cast Concrete Production



Tying up reinforcement for a large tee beam in the reinforcement shop, before delivery to the casting shop



Completed tee beam suspended from the 25-ton crane, with mould and reinforcement for another beam in foreground



A medium-size bridge slab suspended from the 10-ton crane in one of the casting areas



Filling a mould on the large vibrating table with new mould in foreground ready to place in position

New Coaches for S.N.C.F.

The French National Railways are expecting delivery this year of 450 steel coaches, of which 350 will be for main-line, and 100 for suburban services

TO replenish rolling stock depleted during the war, and to cope with peace-time traffic, the French National Railways Company (S.N.C.F.) has placed orders with French firms for 450 steel coaches, comprising 350 for main-line services and 100 for use on the Paris suburban network. It is hoped to secure delivery, which is already overdue, by next summer.

The underframes and bodywork of the new rolling stock are of a light tubular construction. Interior decoration and upholstery of the coaches were designed in

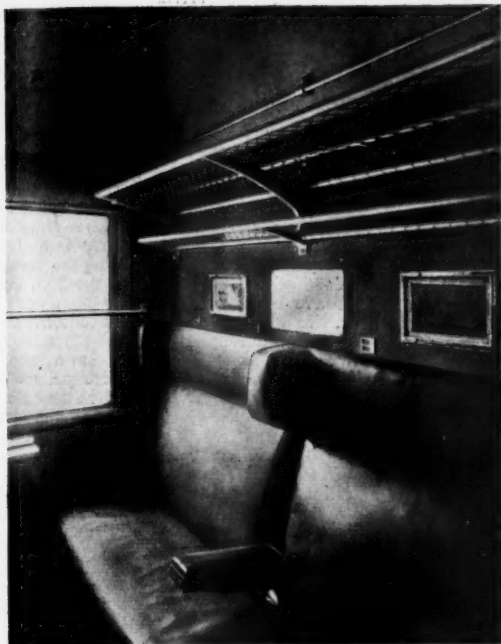
collaboration with specialists with the aim of adding to passengers' comfort. The main-line coaches in all three classes comprise separate compartments opening on to a side corridor, with end vestibules for entry and exit and through corridor connections with adjoining coaches. The main-line coaches are of three types: third class; composite first and second class; and second class with sleeping berths.

Suburban coaches have two wide, sliding-door entrances on each side, opening on to large vestibules which provide ample

standing room in rush hours; a central corridor connects with the passenger seating.

In the first and second classes the upholstery is in the form of a double-cushioned back and inclined seat, and head and arm rests are softer and easier than in older types. In the first class the separate seats provided for each traveller are adjustable for comfort in day or night travel. Third class seats also have been improved with rounded, flexible padding and head and arm rests. The seats can be lifted to facilitate cleaning.

All the main-line coaches have a thermostatically-controlled conditioned air supply, which enables the air in every compartment to be renewed fifteen times an hour.



Third class compartment in one of the new French steel coaches



First class compartment with seats adjustable for night travel

KEN VIEW MODEL RAILWAY.—A special display of the Ken View Model Railway, 27, Broadway Parade, London, N.8, will be held on Monday, April 5, at 7.30 p.m., when there will be timetable running of super-detail locomotives, and lorries, coaches and cars will run a road service simultaneously. The display is to be opened by Mr. T. V. Royle, Deputy Chief Regional Officer, London Midland Region, and among other persons present will be Lord Brabazon of Tara and Lord Incheape. A normal display is held every first Thursday in the month, at 7.30 p.m.

CONFERENCE ON LIQUID FUELS.—The Institute of Petroleum and the Institute of Fuel are to hold a joint conference on "Modern Applications of Liquid Fuels" at Birmingham University from September 21-23, 1948. An exhibition of items related to the subjects on the programme is also to be arranged. The scope of the conference will be indicated in an opening address on "The Place of Liquid Fuel in the British Economy." Separate sessions, each of 2½ hours, will include one on diesel engines

for power generation and railway traction and another on gas turbines for land and marine power purposes. The fifteen papers, to be presented at the conference in summary form, will be printed in full and issued, bound in one volume, one month in advance. Full details will shortly be circulated to members of both Institutes, while inquiries should be addressed to the Secretary, the Institute of Fuel, 18, Devonshire Street, W.1.

WASTE PAPER SALVAGE.—An intensive campaign to increase the salvage of waste paper by 100,000 tons before midsummer has been launched by the Periodical Trade Press & Weekly Newspapers Association. It is pointed out that much valuable salvage can be contributed by engineering firms in the form of old plans, blueprints, diagrams, and drawings. When paper salvage is ready for collection, it will be removed by a local waste paper merchant; if his address is not known, application for the name of an appropriate merchant should be made to the Waste Paper Recovery Association, 52, Mount Street, W.1.

Waste paper is paid for at the following prices per hundredweight: Old letters, account books, etc., 8s.; office letters, records, and invoices, 7s.; magazines and books, 7s.; newspapers, 8s. 6d.; and mixed office waste, 4s.

MOVEMENT OF COAL BY ROAD.—The extent to which it was possible to transfer coal from rail to road during the winter exceeded expectations; the aim had been to increase the road movement of coal from about 300,000 to 400,000 tons per week, but by the end of December the weekly total had reached 420,000 tons. A tribute has been paid by the National Coal Board to the whole-hearted co-operation and assistance given by the Road Haulage Association throughout the winter. The N.C.B. has assured the Association that, without its assistance, transport problems would have developed in spite of the mild weather. Special arrangements were made by the R.H.A. to deal with the carriage of coal in the East Midlands Area, where road movement was increased by over 40,000 tons weekly.

Locomotive Numbering in Malaya

Numeral classification system indicating the class, its subdivision, and the wheel arrangement

By J. M. Bell,

Acting General Manager, Malayan Railway



An example of the numbering system applied to a 4-6-2 locomotive of class "56"

ALMOST every railway administration throughout the world has its own particular method of locomotive classification and numbering. Some railways have adopted a letter classification combined with numbers, whilst others have used numbers throughout. Irrespective of the method adopted, the marking of a locomotive has for its primary purpose some ready means of reference, and may include a letter or some cipher to denote the particular type of traffic for which the locomotive is designed, its wheel arrangement, weight, or some other special feature of which the locomotive traffic operating sections should be reminded constantly. The use of an identifying number of this type is frequently of great value when ordering

spares by telegram from running sheds, as it is possible to select and dispatch these in many instances without further reference to records.

The Malayan Railway, prior to the Japanese occupation in 1942, utilised a letter for each of its locomotive classes, and numbered each locomotive unit serially without attaching any special significance to the number. Consequently the numbers of any particular class of locomotive did not fall serially together.

After the reoccupation of Malaya, it was decided to adopt a system of classification by the use of numbers of five digits. The first two digits indicate the main classification and provided for as many as 90 different classes, as against 26 with the old

single-letter classification. The third digit represents the batch or edition of the class; and the fourth and fifth digits, the serial number of the batch or edition. It thus was possible to make provision in the numbering of locomotives for not less than nine batches of one class of locomotive, each batch to contain up to 99 locomotives.

The main classifications adopted with this new system in Malaya are as follow:—

Main type Classification Nos.	Types
10 to 14 inclusive	Diesel railcars, all types, including independently-driven inspection saloons, but excluding trolleys
15 to 19 "	Diesel shunting locomotives designed as such
20 to 24 "	Diesel main-line locomotives for passenger and/or freight working
25 to 29 "	Steam railcars, all types, including independently-driven inspection saloons
30 to 39 "	Steam shunting locomotives designed as such
40 to 49 "	Steam tank locomotives for passenger and/or freight working
50 to 64 "	Steam tender locomotives, 4-6-2 type
65 to 79 "	Steam tender locomotives, 4-8-2 type
80 to 89 "	Steam tender locomotives, 4-8-4 type
90 to 94 "	Steam tender locomotives, 2-8-2 type
95 to 99 "	Steam locomotives of special types and not otherwise classified in the foregoing

Every type of locomotive designed and built is allotted a class number from the above list. It will be seen from the foregoing that a locomotive bearing the number 56436 (illustrated) would be the 36th locomotive of the 4th batch to be placed in service of the "56" class locomotives.

Cast-iron number plates are affixed to the front and rear of Malayan Railway locomotives, and the numbers are painted on each side of the tenders; and, in the case of tank locomotives, on each of the tank sides.

No special claim is made for this system of classification other than that it is rational, and provides as much information as possible in the five digits forming the number; and enables serial numbering of editions or batches of any class to be carried out. It has proved most satisfactory in use in Malaya, where the railway is of medium size, with a locomotive stock of some 200 units.

A Santa Fe Diesel-Electric Train



The Atchison Topeka & Santa Fe "Chief," hauled by a diesel-electric locomotive, leaving Los Angeles Union passenger terminal

RAILWAY NEWS SECTION

PERSONAL

Mr. J. E. S. Bodger, General Manager, Ceylon Government Railway, is proceeding to England on eight months' leave. Mr. M. Kanagasabay, Operating Superintendent, is acting for him.

Mr. George A. Walker, K.C., who, as recorded in our March 12 issue, has been elected Chairman of the Canadian Pacific

Secretary to the Great Western Goods Conference. In 1933 he became Mineral Traffic Manager, and in 1942, Mineral Traffic Manager & Development Agent. Mr. Furber was appointed Deputy Chief Goods Manager & Mineral Manager in 1946, and assumed the duties of Chief Goods Manager from October 1, 1947.

Mr. A. Moss (Signal & Telecommunications Engineer, Eastern Region, British

Economics of Railway Location," read before and published by the South African Society of Civil Engineers.

Mr. William Allan Mather, who, as recorded in our March 12 issue, has been elected President of the Canadian Pacific Railway Company, was born at Oshawa, Ontario, in September, 1885. He has been in the company's service since he was 19 years of age, except for four years at



Mr. G. A. Walker

Elected Chairman, Canadian Pacific Railway Company



Mr. W. A. Mather

Elected President, Canadian Pacific Railway Company

Railway Company, was born in Toronto in 1879, and entered the service of the C.P.R. as a telegraph messenger, but a few months later transferred to the Solicitor's Office. He studied for a law degree, and in 1906 was called to the Ontario Bar; in 1916 he became a K.C. In 1911 Mr. Walker went to Calgary, Alberta, as the company's Solicitor. He was there for 23 years, and was then transferred to the head office in Montreal, becoming in 1945 Vice-President & General Counsel, and, in 1947, Vice-President and a Director.

In our October 17, 1947, issue, we published a portrait and biographical details of Mr. C. Furber, M.Inst.T., who, as recorded in our March 12 issue, has been appointed Commercial Superintendent, Paddington, Western Region, British Railways. He was born in 1889 and entered the G.W.R. service in 1904; he became Assistant to the London District Goods Manager in 1926, and subsequently was appointed Chief Clerk to the Chief Goods Manager, in which capacity he acted as

Railways) has been elected President of the Institution of Railway Signal Engineers for 1948. The Vice-Presidents are Mr. R. Dell (Signal Engineer, London Transport) and Mr. F. Horler (Signal Engineer, Siemens & General Electric Railway Signal Co. Ltd.).

Mr. Oscar Bertoya and Mr. W. S. Carlisle Tully have been appointed Directors of the Renold & Coventry Chain Co. Ltd.

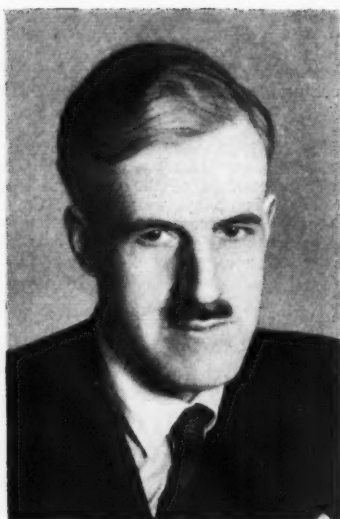
Mr. W. E. Blakey, London City Manager, Eastern Region, British Railways, has been appointed Assistant Commercial Superintendent, Eastern Region.

Mr. E. S. Bradley, District Engineer, York, North Eastern Region, British Railways, has been appointed District Engineer, Newcastle.

Mr. A. F. Bruyns-Haylett, Inspecting Engineer, Chief Civil Engineer's Department, South African Railways, has received an S.A.R. award for his paper, "The

McGill University, where he obtained an engineering degree. In 1910 he was appointed Resident Engineer at Winnipeg, but in 1912 transferred from the Engineering to the Operating Department, as Acting Superintendent at Kenora, and later Superintendent. He subsequently served as Assistant General Superintendent at Vancouver, General Superintendent at Moose Jaw, General Superintendent at Calgary, Assistant to the Vice-President at Montreal, General Manager at Winnipeg, and Vice-President at Winnipeg, before becoming, in 1947, Vice-President, Prairie Region.

Mr. M. A. Cameron, M.Inst.T., who, as recorded in our January 30 issue, has been appointed Assistant Secretary (Traffic), Chief Secretary & Legal Adviser's Department, British Transport Commission, was born in Lucknow, India, in 1904. He was educated at St. Mary's School, Melrose, Fettes College, and Edinburgh University, where he took first class honours in Economics. He joined the L.N.E.R. in 1926 as a traffic apprentice, and commenced his train-



Mr. M. A. Cameron

Appointed Assistant Secretary (Traffic),
British Transport Commission

ing at Morningside Road Station, thence going to Haymarket (Passenger), South Leith (Goods), and Aberdeen; he completed his training in England. In 1930 he entered the Road Transport Section of the Passenger Manager's Department in London, and subsequently became Head of the Pooling & Special Subjects Section. In 1935 Mr. Cameron was appointed Assistant London District Passenger Manager and he became District Passenger Manager, Leeds, two years later. He was promoted to be Assistant to the Passenger Manager, L.N.E.R., Southern Area, in 1939, and, again, two years later, was appointed Acting Assistant Goods Manager, Southern Area, which post he vacated in 1943 on his appointment as Acting Passenger Manager, Scottish Area, L.N.E.R. In 1945 he became Assistant Passenger Manager, Southern Area. Mr. Cameron is a Member of the Institute of Transport, and is now serving his second term as a member of the council of the Institute. He is keenly interested in staff



Mr. H. J. Birkbeck

Appointed Assistant (Railway & General) to the
Charges Adviser, British Transport Commission

training and education, and is a member of the Institute of Transport committee responsible for the recently-published "Report on Education in Management for Transport." He is also a member of the executive of the Joint Council for Monetary & Economic Research. Mr. Cameron is the author of a book entitled "Plain English," published in 1947, and of various papers, including one on "Personnel Management as a Factor in Transport Efficiency," which was awarded the Institute of Transport Premium in 1944.

Mr. H. J. Birkbeck, who, as recorded in our January 30 issue, has been appointed Assistant (Railway & General) to the Charges Adviser, British Transport Commission, commenced his railway service with the former North Eastern Railway in the District Passenger Agent's Office, Darlington, in 1906. He subsequently served in the Mineral and Goods Departments at Darlington, Middlesbrough, and



Mr. A. A. Harrison

Appointed Executive Officer (Road Transport),
Railway Executive

York, and in 1913 represented the North Eastern and East Coast Railways at the Ghent Exhibition. In 1914 his services were loaned to the Tees Development Association. During the war of 1914-1918 he served in France and was awarded the M.S.M. and mentioned in despatches. Demobilised in 1919, he was for two years engaged in London in connection with the investigations of the Rates Advisory Committee, afterwards being transferred to Hull for operating experience. From 1923 to 1929 he served in the Chief General Manager's Office, in the Works and Shipping Sections, and afterwards in the Goods Manager's Rates & Charges Section, Kings Cross, where he was in charge of development and took an active part also in pooling matters. Mr. Birkbeck was appointed District Goods & Passenger Manager, Peterborough, in 1936, and was released early in 1943 to take up special work in connection with the Road & Rail Conference.



Mr. A. R. Dunbar

Appointed Operating Superintendent (Eastern
Section), Eastern Region, British Railways



Mr. H. C. Johnson

Appointed Operating Superintendent (Western
Section), Eastern Region, British Railways



Photo

[Lafayette

Mr. H. Holland

Senior Assistant Architect, L.M.S.R.,
who retired on December 31 last

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Mr. A. A. Harrison, who has been appointed Executive Officer (Road Transport) to the Railway Executive, hitherto was Assistant Goods Manager (Southern Area), L.N.E.R. He was educated at Kilburn Grammar School, and started his railway career with the L.N.W.R. He joined the North Eastern Railway in 1922, and, after a period of training in the north, took up staff work in the Chief General Manager's Office, L.N.E.R., at Kings Cross. In 1926 he was appointed Assistant to the L.N.E.R. (Southern Area) District Manager at Leeds, and continued in a similar post when the Southern and North Eastern Area district offices at Leeds were combined. He took a special interest in cartage work, and was appointed Road Motor Superintendent for the North Eastern Area in 1933, becoming Cartage Manager in 1941. As such he was responsible for the development of a comprehensive railhead collection and delivery system in North East England, and the mechanisation of most of the cartage work in the towns. In 1943 he returned to the Southern Area as Acting Assistant Goods Manager, in which appointment he was confirmed last year. Mr. Harrison was chairman of the Yorkshire section of the Institute of Transport from 1941 to 1943.

Mr. Alexander Robert Dunbar, M.B.E., who, as recorded in our February 13 issue, has been appointed Operating Superintendent (Eastern Section), Eastern Region, British Railways, joined the North British Railway in 1920 as a junior clerk, and in 1924, after having been selected by a competitive examination, was appointed a traffic apprentice on the L.N.E.R. After three years training he became Assistant Yardmaster, Cadder, and then Assistant Yardmaster, Guide Bridge. In 1931 he was promoted to be Deputy Chief Controller in the Manchester District Control Office, and later in the Central Control Office at Liverpool Street. Mr. Dunbar was appointed Yardmaster at Sheffield in 1935, and in the next year became Assistant District Superintendent, Manchester. In 1940 he was made District Superintendent, Leeds, and, in 1942, District Superintendent, Manchester. In 1943 he was appointed Acting Assistant Superintendent (Eastern Section), Southern Area, and after the end of the war was awarded the M.B.E. for services in connection with the military and Air Force traffic in East Anglia. In 1946, Mr. Dunbar became Senior Assistant Superintendent, Southern Area, L.N.E.R.

Mr. H. C. Johnson, who, as recorded in our February 13 issue, has been appointed Operating Superintendent (Western Section), Eastern Region, British Railways, was educated at Bedford Modern School, and entered the service of the L.N.E.R. in 1923, as a traffic apprentice. After receiving general training in the various departments, he was appointed Yardmaster, Whitmoor, in 1927; that was followed by a period of special duty at headquarters before he was transferred, in 1932, to the staff of the District Superintendent, Cambridge, as Head of the Control and Trains Sections. In 1935 he was appointed to the Superintendent's staff as Chief Controller & Chief Freight Trains Clerk for the Eastern Section, Southern Area, and, in 1938, he returned to Cambridge as Assistant District Superintendent. Mr. Johnson became Assistant to the Superintendent, Southern Area, in 1940; and in 1942 he became Assistant Superintendent of that area, with chief responsibility for the Western Section.

Mr. Harry Holland, F.R.I.B.A., who retired on December 31, 1947, from the position of Senior Assistant Architect on the headquarters staff of the L.M.S.R., is 61 years of age. He was educated at Chester College, Chester Technical School, and Chester School of Science & Art. He served his pupilage and worked for several years with architects in Liverpool and with the County Architect of Cheshire, and then went to London; a scholarship enabled him to enter the Royal Academy School of Architecture, and he gained the "Academy Ivory." Mr. Holland joined the L.N.W.R. at Euston in 1911, as an Architectural Assistant, and, after service with the Royal Fusiliers and afterwards with the Royal Engineers, during which he was wounded in France, returned to Euston and was subsequently appointed Senior Assistant Architect. For several years he was Advisory Architect to the Estate Development Committee. During the recent war he was engaged on special duties in connection with research and post-war reconstruction schemes, and finally with rehabilitation of office buildings requisitioned during the war. Two of Mr. Holland's brothers have also retired recently from railway service, Mr. F. Holland as Divisional Engineer, Taunton, Great Western Railway, and Mr. William C. Holland as General Manager's Representative (Rates & Commercial), Central Argentine Railway.

We regret to record the death on March 13, in his 95th year, of Mr. James Tyrrell, M.I.Mech.E., who was Locomotive, Carriage & Wagon Superintendent of the Midland & South Western Junction Railway from 1892 to 1922.

Mr. F. H. Champion, well known in Fleet Street and industrial circles as a leading practitioner in press and public relations, has been elected Chairman of the Newspaper Press Fund. Mr. Champion was for many years a newspaper executive and for two years during the war assisted Lord Kindersley as Editorial Director of the National Savings movement.

Mr. V. H. F. Hopkins has been appointed General Diesel Sales Manager, C.A.V. Limited, and has taken over responsibility for the oil engine equipment and mechanical engineering sales organisation of the company, covering all combustion engine applications at home and overseas. Mr. J. C. H. Lovelock, formerly technical representative, has been appointed Service Manager, responsible for the company's world service organisation.

LONDON MIDLAND REGION APPOINTMENTS

Mr. H. F. Henstock, Assistant Divisional Controller (Freight Services), Divisional Operating Manager's Office, Derby, to be District Controller, Gowhole.

Mr. P. Liddell, Assistant District Locomotive Superintendent, Bristol, to be Assistant District Locomotive Superintendent, Derby.

Mr. J. N. N. Thompson, Foreman Fitter, Motive Power Depot, Derby, to be Assistant District Locomotive Superintendent, Bristol.

Mr. Paul Tresch has been appointed Head of the new division, within the central management of the Swiss Federal Railways, dealing with matters concerning power stations and power supply, to which reference was made in the Overseas columns of our March 12 issue. Mr. Tresch joined the Federal Railways in 1921. In 1932 he became Second Chief of Section in the former joint division

dealing with the maintenance of way and with power stations, in which capacity he was concerned with the latter. He was promoted First Chief of Section in 1940 and placed in charge of the electric power services.

Mr. Paul Reilly is joining the Council of Industrial Design as Public Relations Officer in charge of promotion and publicity. He will be assisted in Press liaison by Mr. Ronald D. Amos (Press Officer) and Mrs. Rosetta Desbrow (Assistant Press Officer).

Mr. Walter Wachs, Chief Engineer, Second Division, Swiss Federal Railways, has been appointed Divisional Manager, Second Division, succeeding Mr. Cesare Lucchini, who was recently appointed General Director (Engineering & Operating) of the Federal Railways.

Mr. R. A. Emerson, of Vancouver, has been appointed Engineer of Track for the Canadian Pacific Railway. A third generation C.P.R. employee, whose grandfather, father and mother were all in company service before him, Mr. Emerson has been stationed at Vancouver since 1944, as Assistant District Engineer and District Engineer.

Mr. O. G. Wynn has been re-elected Chairman, and Mr. J. N. Drummond, Vice-Chairman, of the Road Haulage Association Heavy Haulage Group for the coming year. Mr. E. O. Daniels has also been appointed a Vice-Chairman.

Over 200 members of the District Goods Managers' Office, Bristol, Western Region, and their friends attended a supper dance and whist drive at the Berkeley Hotel, Bristol, recently. Mr. H. Bolton, District Goods Manager, welcomed Mr. David Blee (member of the Railway Executive) and Mrs. Blee, Mr. F. D. Arney (General Manager, Port of Bristol Authority) and Mrs. Arney, and many guests from other departments of the Western Region.

COLONIAL RAILWAY APPOINTMENTS

The Secretary of State for the Colonies recently has approved the following appointments:—

Mr. F. G. Joscelyne as Assistant Engineer, Nigerian Railway.

Mr. H. W. McAughtry as Assistant Engineer, Way & Works Department, Malayan Railway.

Mr. G. R. S. Paskins as Assistant Engineer, Tanganyika Government Railway.

Mr. H. R. R. Farmer as Assistant Locomotive Superintendent, Nigerian Railway.

Mr. I. C. Gillespie as Assistant Engineer, Nigerian Railway.

Mr. A. G. Cowley, Assistant Locomotive Superintendent, Palestine Railways, as Assistant Locomotive Superintendent, Kenya & Uganda Railways & Harbours.

Mr. J. A. Mitchell, Second Assistant Mechanical Engineer, Transport & Harbours Department, British Guiana, as Chief Mechanical Engineer, Transport & Harbours Department, British Guiana.

Mr. W. A. J. Buckingham, Chief Signals Inspector, Nigerian Railway, as Signals Superintendent, Nigerian Railway.

Mr. W. H. Best, Assistant Traffic Manager, Nigerian Railway, as Traffic Manager, Nigerian Railway.

Mr. N. W. Hall, Assistant Traffic Superintendent, Palestine Railways, as Traffic Inspector, Nigerian Railway.

Mr. T. Sharp, Senior Assistant Traffic Officer, Nigerian Railway, as Assistant Traffic Manager, Nigerian Railway.

Increased Southern Region Continental Services

Following the lifting of the ban on tourist travel to certain Continental countries (see our March 19 issue) the Southern Region will operate additional services from May to cater for the extra traffic. The Folkestone-Calais service (for Switzerland), suspended since November 2, 1947, will be resumed on May 8, leaving Victoria at 2.30 p.m. daily. Service will be resumed on the Folkestone-Boulogne route (suspended since October 5, 1947) from June 18 to October 2, leaving Victoria at 8 a.m. daily. There will be a daily service via Newhaven-Dieppe from May 9, leaving Victoria at 9.5 a.m., replacing the present service three times a week. In addition, a night service will depart at 7.50 p.m. on Tuesdays, Thursdays and Saturdays from June 17 to October 2.

The Southampton-Havre service (at present Monday nights only) will operate on Mondays and Fridays from May 3 to June 11, and from September 13. From June 14 to September 10 an additional service will run on Wednesdays. Departure from Waterloo will be at 9 p.m. A direct Southampton-St. Malo service on Mondays and Wednesdays will be resumed from July 5 to September 29, leaving Waterloo at 8.20 p.m. There will also be the daily services from Victoria via Dover-Calais ("Golden Arrow" route), Dover-Dunkerque (the night ferry), and Dover-Ostend.

Modernisation of Signalling in Argentina

In *The Railway Gazette* of November 14, 1947, the visit to Argentina was reported of two representatives of American builders of railway equipment, who emphasised the advantages of modern stainless steel trains such as those at present running in many parts of the United States. That the American railway industry is fully alive to the Argentine market is once more stressed by the visit to the country of Mr. S. J. Turreff, Assistant to the President of the Union Switch & Signal Company of Pennsylvania, to discuss the subject of railway signalling as it might be applied to increase the capacity and safety of the railways of Argentina.

In an interview after several journeys over some of the principal lines in Argentina, Mr. Turreff spoke of the high standard of service and equipment on most of the routes, especially after taking into consideration the fact that rolling stock and equipment had not been renewed for many years, due principally to the war. He added that the train service within the suburban area of Buenos Aires was excellent, and compared very favourably with the suburban services in any part of the metropolitan areas of the United States.

The time had come, however, for extensive modernisation if the railways were to play their full part in enhancing the country's economic development, and it was gratifying to see that the Argentine authorities were already taking active steps to introduce up-to-date locomotives, rolling stock and equipment on the State-owned lines.

Mr. Turreff pointed out that improved signalling could mean that a large proportion of men assigned to relatively unproductive signal duty could be transferred to more productive work, and the railways could increase traffic and safety on their existing tracks and make impor-

tant fuel economies. As an instance, he said that the Central Railway of Brazil recently installed new signalling on a 96-km. section of its line. The signals worked semi-automatically under a central control station handled by one man. Goods trains, which, until the installation of the system, were taking 5 hr. to cover the distance, now were taking only 3 hr. or less.

When questioned as to the cost of installing electric circuit signalling systems, Mr. Turreff pointed out that the investment could be amortised in 10 to 12 years. Electric power required for signalling was small, and could be carried many miles.

Interchange of Locomotives on British Railways

An exchange of locomotives between the regions of British Railways is being arranged to begin on Monday, April 19, to obtain information on which to base plans for future standardisation. The locomotives to be exchanged will be express passenger, mixed traffic, and freight types. These will be worked in the normal services over selected routes.

Dynamometer cars will be attached to the trains, which will be made up to agreed weights so as to afford comparative information. The locomotives will all use the same grade of coal when working on the same test, and will be manned by the enginemen who normally work them in their home region.

The tests will be spread over a period of about four months. The express passenger locomotive tests will be completed in about nine weeks. The mixed traffic locomotive tests will start in the fifth week and extend until the twelfth week.

These tests, it is hoped, will provide all necessary information to enable the locomotive engineers of British Railways to decide on the most satisfactory and economical features of the locomotives for the various purposes for which they are required. The results should enable a very considerable reduction to be made in the number of types built in future, with substantial consequent economy.

Selected classes of locomotives, routes over which they will work, and services they will operate are shown below.

Southern Region locomotives operating over routes necessitating water pick-up facilities will be equipped with L.M.S.R. tenders provided with this equipment.

EXPRESS PASSENGER LOCOMOTIVES					
Former group	Class	No. of cylinders	Wheel arrangement	Routes	
L.N.E.R. ...	"A4" ...	3	4-6-2	each running between	Euston—Carlisle
L.M.S.R. ...	"Duchess" ...	4	4-6-2		Kings Cross—Leeds
L.M.S.R. ...	"Royal Scot" ...	3	4-6-0		Paddington—Plymouth
S.R. ...	"Merchant Navy" ...	3	4-6-2		Waterloo—Exeter
G.W.R. ...	"King" ...	4	4-6-0		Kings Cross—Leeds
MIXED TRAFFIC LOCOMOTIVES					
L.N.E.R. ...	"B.1" ...	2	4-6-0	each running between	Perth—Inverness
L.M.S.R. ...	Standard Class "5" ...	2	4-6-0		St. Pancras—Manchester
S.R. ...	"West Country" ...	3	4-6-2		Bristol—Plymouth
					Marylebone—Manchester
G.W.R. ...	"Hall" ...	2	4-6-0		Marylebone—Manchester
FREIGHT LOCOMOTIVES					
L.N.E.R. ...	"O1" ...	2	2-8-0	each running between	Toton—Brent
L.M.S.R. ...	Standard Class "8" ...	2	2-8-0		London—Peterborough
W.D. ...	"Austerity" ...	2	2-8-0		London—South Wales
W.D. ...	"Austerity" ...	2	2-10-0		Bristol—Southampton
G.W.R. ...	"38 XX" ...	2	2-8-0		London—Peterborough
					London—South Wales
					Bristol—Southampton
SERVICES TO BE OPERATED					
Express Passenger Locomotives			Mixed Traffic Locomotives (working passenger services)		
10 a.m.	Euston to Carlisle		4 p.m.	Perth to Inverness	
12.55 p.m.	Carlisle to Euston		8.40 a.m.	Inverness to Perth	
1.10 p.m.	Kings Cross to Leeds		10.15 a.m.	St. Pancras to Manchester	
7.50 a.m.	Leeds to Kings Cross		1.50 p.m.	Manchester to St. Pancras	
1.30 p.m.	Paddington to Plymouth		1.45 p.m.	Bristol to Plymouth	
6.30 a.m.	Plymouth to Paddington		1.35 p.m.	Plymouth to Bristol	
10.50 a.m.	Waterloo to Exeter		10 a.m.	Marylebone to Manchester	
12.40 p.m.	Exeter to Waterloo		9.55 a.m.	Manchester to Marylebone	

Ten Thousand Issues of the "Daily Herald"

The *Daily Herald* of March 22 was the 10,000th issue of that newspaper. On March 21, the Prime Minister, Mr. C. R. Attlee, attended a concert at the Royal Albert Hall to commemorate the occasion. Speaking in the interval, the Prime Minister recalled the debt owed by the paper to the efforts of Mr. Ernest Bevin and the late Lord Southwood. He said that they did not want a paper like those to be seen in some countries, which merely expressed the views of the Government, but what they wanted, and what they had got, was a paper that while giving general support to the Labour movement, allowed for the expression of other points of view. Later, the Prime Minister visited the *Daily Herald* offices, and set in motion the presses that printed the 10,000th issue. Among other speakers at the concert were Mr. Arthur G. Cousins, Chairman of Odhams Press Limited, and Mr. Percy Cudlipp, Editor of the *Daily Herald*. A souvenir programme of the concert told the development of the *Daily Herald* from its inception on January 25, 1911, as a London printers' news sheet during their strike for a 50-hr. week. The newspaper was revived on April 13, 1912, on a broader basis, but in its early days had a hard struggle financially, in which it was aided by the donations of many sympathisers. After a period of weekly publication during and after the 1914-18 war, the paper reverted to daily publication, and achieved a greatly increased circulation as a result of the efforts made by Mr. Ernest Bevin, who had presented to the Trades Union Congress a scheme to provide the capital for turning the paper into a daily, equal in size and facilities to any other in the country. This was approved, and an agreement was drawn up with the late Lord Southwood, Chairman of Odhams Press Limited, to ensure the future of the paper. At the present time, the *Daily Herald* had the status of the official organ of the Labour movement. It is produced by Odhams Press Limited. The articles of association between Odhams, which owns 51 per cent. of the shares, and the Trades Union Congress, which owns 49 per cent., specify that the political policy of the *Daily Herald* shall reflect the policy laid down by the annual conference of the Labour party; and that the industrial policy shall be that of the General Council of the T.U.C.

Ministry of Transport Accident Report

Bletchley, L.M.S.R.: May 29, 1947

Lt-Colonel E. Woodhouse inquired into the accident which occurred near Bletchley, L.M.S.R., at about 3.48 p.m. on May 29, 1947, when the 2.50 p.m. express, Euston to Manchester, formed of 14 screw-coupled bogie coaches, drawn by a converted "Royal Scot" class 4-6-0 locomotive, No. 6129, and travelling at about 60 m.p.h., became partly derailed. The couplings parted between the eighth and ninth coaches, the two portions of the train coming to rest about 820 yd. apart, the rear one being completely derailed.

In the front portion the last coach was off the rails and one pair of wheels of the coach ahead of it, but there was scarcely any damage, apart from bruising of tyres on the derailed wheels. In the rear portion the bogies and gear below floor level were damaged considerably, but damage to bodywork was remarkably light. Fortunately there were no serious casualties, although the train was well-loaded; 31 passengers complained of injury or shock, but only three were detained in hospital. Assistance was quickly forthcoming.

The weather was fine and very hot. Distortion of the track by heat was the cause of the accident.

The Track

The track was standard 95-lb. R.B.S. material, with 60-ft. rails laid in 1935 and worn to an average weight of 87 lb., with 9-in. two-bolt fishplates. The line is in a cutting and the west slope had in past years given trouble by slipping, a little to the south of the point of derailment. For about 250 yd. the ballast of the down fast line—the most westerly and the one on which the train was travelling—is of ash, to act as a blanket on the underlying clay and simplify adjustment for level. The change to stone is ill-defined, but is at about the point where the first marks of derailment were found.

The first of these consisted of two flange marks on the right-hand rail, although there was slight distortion of track towards the left about 20 yd. in rear. The only vehicle derailed to the right was the eighth. Beyond the first marks the track was misaligned to the left and considerably damaged under the rear part of the train, 110 yd. requiring complete renewal. Ahead of this the sleepers and chairs were damaged for 831 yd. by the two derailed coaches at the back of the first portion of the train.

The Course of Events

The preceding train, the 2.40 p.m. Euston to Liverpool, passed 10 min. before at 60 to 65 m.p.h., and no unusual movement or oscillation was felt. Examination of the engine at Liverpool revealed nothing which might have damaged the track, with which a routine examination at about 2.30 p.m. by a ganger had disclosed nothing amiss. The signalman at the box in rear saw nothing unusual when the Manchester express passed, nor was any defect found on any of the coaches, or the engine, before or after the accident, which could have contributed to it.

The driver said that soon after passing the box in rear, $\frac{1}{4}$ -mile south of the point of derailment, he saw a kink in the track, towards the right and not far in front. He thought it was at a joint and that the rails were 2 or 3 in. out of line there. He felt a jolt or side sway as he passed it, though it was not very severe. He had often felt a worse lurch, but this was suffi-

ciently forcible to make him wonder how the train would fare. Almost immediately he felt a severe snatch and applied the brake. He then observed that vacuum was falling, due to the parting of the train, of which he was not then aware.

The ganger had been in charge of the length for three years. He had not found its maintenance troublesome, though the ash ballast section needed frequent lifting, especially in wet weather. The last lift took place a week before. Expansion gaps had not been reduced unduly by rail creep, though there was a slight tendency towards that. Usually the rails need pulling back once a year. This was done last in 1946, and the ganger was certain he would have noticed if it had again become necessary when the fishplates were loosened for oiling three weeks before the accident.

The line immediately in rear of the derailment marks was inspected shortly after the accident by the ganger and sub-inspector, and an hour later by the District Engineer, who all found the rail joints "pretty tight" for six or seven rail lengths, though in other respects the track was in very good condition.

All witnesses were unanimous about the extreme heat that afternoon, and the District Engineer regarded the tight joints as solely due to this, for he found the fishplates more or less central between the joint chairs, not in contact, as would have been the case if attention was needed to counteract rail creep. Early next morning the gaps had opened out normally. A Hallade chart made at the point on May 5, 1947, at 61 m.p.h. showed no abnormalities in running.

Shade temperature records taken 10 miles from Bletchley showed a marked rise of temperature up to the date of the accident, rising from a maximum of 52° F. on May 20 to 85° F. on May 29, with minima of 46° F. to 56° F. The ranges between were 30° on May 28 and 29° on May 29. These were large, but not exceptional, the mean daily range at the recording point being 19°.

No particulars of sun temperatures were available, but it is common knowledge that rails, etc., exposed to hot sun, reach temperatures considerably in excess of that recorded in the shade.

Inspecting Officer's Conclusion

The track had been well maintained where the buckling occurred. The District Permanent Way Inspector spoke of the ganger as a most conscientious worker and looked on his length as about the best between Denbigh Hall and Wolverton. This is supported by the Hallade test, and Colonel Woodhouse accepts the ganger's statement that there was reasonable allowance for expansion in the joints, and that this had not been nullified by creep.

The only conclusion can be that sudden track distortion was caused by the extreme heat, probably accentuated by the relatively sheltered situation. It was fortunate that the derailed coaches remained coupled and in line and were saved from overturning by the side slope of the cutting, or consequences might have been far more serious.

It seems likely that buckling took place immediately behind the Liverpool train, the vibration of its passage having a "trigger effect," lessening friction between sleepers and ballast and allowing compressive stress in the track to release itself at a weak point. It is significant that this

occurred near one end of the length ballasted with ashes, which offer less resistance to lateral sleeper movement than stone ballast.

No doubt the 2-bolt fishplates contributed to lack of rigidity; all permanent way witnesses expressed a preference for the older 4-bolt type. Colonel Woodhouse was informed that a reversion is being made to the latter. The former has some advantages, but is not altogether satisfactory.

Ash ballast has been in use on this length for about 20 years, and replacement by stone has been under consideration for some time. Slipping of the cutting slope appears to have ceased and formation under the fast lines is being improved. They are to be re-graded for about 340 yd. The ash and clay will be removed to not less than 30 in. below the underside of the sleepers, and the new formation, graded to the down side cess drain, will be built up of 6 in. of fine sand, 12 in. or more of sand and gravel ballast, and finally 12 in. of granite ballast beneath the sleepers. Raising of the fast lines will allow for a proper fall of cross drains leading to a deep drain on the up side, and the slow lines probably will be raised later to correspond.

Westinghouse Brake & Signal Co. Ltd.

The ordinary general meeting of the Westinghouse Brake & Signal Co. Ltd. was held in London on March 16, Captain A. R. S. Nutting, Chairman of the company, presiding.

The Chairman, in moving the adoption of the report and accounts, recalled that Captain B. H. Peter had retired last September, and Mr. Donald F. Brown had been appointed Managing Director in his stead. Mr. Brown had been in the service of the company since 1919. He was the company's representative in Poland in the pre-war period, and had carried out several important missions on behalf of the company, which had made him familiar with their Australian and Indian subsidiary companies.

This year, in addition to the balance sheet at September 27, 1947, of their own company, the board presented to members a consolidated balance sheet and a consolidated profit and loss account for the same period. These consolidated accounts anticipated largely, but not wholly, the requirements of the new Companies Act.

A note on the balance sheet stated that there were commitments for capital expenditure of £107,000. The total of the fixed assets had increased by over £148,000 during the period under review. On the other hand the current assets showed a decrease of over £93,000 in the same period. The Government's desire for the curtailment of capital expenditure was one which they had to take into account, but, as all their commitments were aimed at increased production and efficiency and the catching up of arrears, which accumulated during the long war years, the question as to what to cut out and what to delay was one of great difficulty.

The large increase of nearly £365,000 in their stocks and works in progress, together with the increased cost of almost every article or component they purchased, explained the fall in the cash position at the end of September, 1947, as compared with the figures for September, 1946. The board authorised the building up of stocks of materials as a definite policy, so as to ensure continuity of production.

They had had experience of shortages of materials, resulting in hold-ups at the factory, and in consequence they had endeavoured to avoid any major disaster resulting from shortages by purchasing stocks of essential materials when available.

As to the item of £537,246 for bills receivable and promissory notes, against which a provision of like amount was made in 1940, they had been advised that as a result of arrangements made between the British and Polish Governments, there was likely to be a scheme dealing with the settlement of the pre-war Polish State indebtedness. This scheme would cover the Polish promissory notes they held. He hoped that the scheme would come into being within a reasonable time.

The operating subsidiary companies, with the exception of their Indian subsidiary, made profits in their last financial year and the net profit of the parent company included those profits to the extent of the dividends declared by the subsidiaries on the parent company's shareholdings in them. The unfortunate position of their Indian subsidiary was due entirely to the unsettled conditions which had prevailed in India. At the end of December, 1947, the Indian company had an excellent order book, which was in excess of that of the previous year.

The consolidated profit and loss account showed that, comparing 1946 with 1947, the trading profits and sundry income of the parent company had increased by over £57,000, whereas the trading profits and sundry income of the subsidiary companies had decreased by over £23,000. The decrease was due to the loss made by the Indian subsidiary company. The other operating subsidiaries all showed increases in their profits.

The trading profit and sundry income of the group as a whole showed an increase of £27,000, as compared with last year, but the effect of taxation with its increase of £80,000 was to reduce the net profit of the group by £53,000. Members will see that this had a serious effect on the balance of profit available this year, which was disappointing in the light of the improved results of the group as a whole for 1947 as compared with 1946. He regretted that there had been no settlement in regard to the company's problem relating to E.P.T. questions.

The balance of profit available was £255,103, which included the carry-forward from 1946. The board had appropriated £50,000 to general reserve, making that reserve £700,000, and £5,000 to staff pensions account, which now would stand at £45,000.

The carry-forward to the current year would be £93,680 after the payment of the dividend recommended of 14 per cent., less income tax at the rate of 9s. in the £. The dividend would cost £86,423.

In conclusion, the Chairman said that their order book remained large, with a high proportion for the export market either directly or indirectly. Inquiries received and tenders submitted were large in number and substantial in volume. To their stockholders he could, with much more confidence than at the same time last year, say that they were making good progress in all the vital and essential matters. The task before them, however, remained hard and would require the undivided attention and effort of everyone connected in any way with the company and its subsidiaries.

The report and accounts were adopted unanimously.

Questions in Parliament

Transport Consultative Committee

Mr. Ernest Davies (Enfield—Lab.) on March 8 asked the Minister of Transport if he had any statement to make regarding the establishment of the consultative committees provided for in the Transport Act, and if he would give the names of the members thereof.

Mr. Alfred Barnes (Minister of Transport) in a written answer stated: I am actively considering the composition and location of these committees in conjunction with the British Transport Commission, and I hope in the near future to invite nominations for the Central Transport Consultative Committee for Great Britain from the national bodies representative of the interests concerned.

Transport of Sheep

Flight-Lieutenant C. Challen (Hampstead—C.) on February 3 asked the Minister of Food whether he was aware of the unsatisfactory conditions for the transport of live sheep from railway sidings at Bristol to the abattoirs at Cumberland Basin and Whitehall; and whether arrangements could now be made to provide lorries for that purpose so as to avoid unnecessary cruelty.

Mr. John Strachey (Minister of Food), in a written answer, stated: Sheep for slaughter which arrive at Bristol by rail are driven through the streets to the abattoirs but this should not involve cruelty. As a result of complaints that driving the animals through the streets constitutes a public nuisance, the local authority, railway officials, and other interested parties have for some time been exploring various alternatives.

Rail Transport of Coal

Mr. C. Osborne (Louth—C.) on February 23 asked the Minister of Transport what type and quality of coal was subject to a ban on rail transport for delivery under 40 miles, how much coal did this affect per annum, and when did he anticipate being able to lift the ban.

Mr. Alfred Barnes, in a written answer, stated: No ban has been imposed upon the rail transport of coal but, having regard to the railway transport situation, arrangements were made last autumn by the National Coal Board in agreement with the other interests concerned for certain deep-mined coal, mainly that for delivery up to a radius of 40 miles, to be diverted from rail to road. The arrangements did not apply to all coal up to the radius of 40 miles. As the railway position is now very much easier these arrangements are in process of being wound up.

Iron and Steel Industry

Sir Waldron Smithers (Orpington—C.) on March 2 asked the Minister of Supply if he would give in tabular form the number of industries covered by the term "Iron and Steel Industry" as used by his department; the number of companies in each separate industry; and the approximate amount of capital and persons employed in each of the industries.

Mr. G. R. Strauss (Minister of Supply) stated in a written answer: For purposes of administration, the iron and steel industry is regarded as comprising undertakings engaged on a number of diverse production activities. The extent of these activities is indicated in Table I below, showing the number of undertakings engaged in each. Many undertakings are engaged in more than one

activity and therefore appear under more than one heading in the Table. Details of the labour employed in the industry are given in Table II. Information concerning the capital employed in the different sections of the industry is not available.

TABLE I NUMBER OF PRODUCERS BY TRADES

Iron ore	55
Pig iron	43
Ferro alloys	22
High-speed steel	94
Billets, blooms and slabs	32
Sheet and tinplate bars	22
Heavy and medium plates	35
Heavy rails, sleepers and fishplates	17
Armour plate	5
Other heavy rolled products	47
Light re-rolled products	124
Wrought iron	26
Bright steel bars	48
Cold rolled strip	31
Sheets (coated and uncoated)	43
Tinplate, terneplate and blackplate	29
Tubes and pipes	38
Wrought iron pipe fittings	189
Drop forgings	12
Railway tyres, wheels and axles	68
Other forgings	15
Wire rods	94
Wire	8
Wire rope	16
Wire netting	9
Wire chain link fencing	19
Wire nails	10
Reinforcement fabric	48
Springs (certain)	183
Bolts, nuts, rivets, screws, and washers	98
Steel castings	2,100
Iron castings	

TABLE II LABOUR EMPLOYED AS AT WEEK ENDED JANUARY 10, 1948

Trade	Total employed
(1) General Process Workers—	
Iron ore mines	4,560
Coke ovens	3,326
Blast furnaces	10,902
Steel melting	20,906
Rolling mills	45,184
Sheet making	18,097
Tin plate	12,888
Drop forging	9,591
Other forging	8,295
Steel foundries	18,902
Wire manufactures	17,111
Wrought iron	2,176
Tubes and fittings	20,266
Total	192,204
General and maintenance	94,008
Clerical workers	25,666
Total	311,878
(2) Bolts, Nuts—	
Process and maintenance	26,540
Clerical workers	3,622
(3) Ferro-Alloys—	
Process and maintenance	1,739
Clerical workers	186
(4) Iron Foundries—	
Process and maintenance	138,168
Clerical workers	5,968
Total, Sections (1) to (4)—	
Process and general maintenance	452,659
Clerical workers	35,442
Total	488,101

Cheap Tickets and Accident Liability

Mr. Peter Freeman (Newport—Lab.) on March 8 asked the Minister of Transport whether he was aware that no compensation was payable to passengers using a workman's ticket and others at reduced charges; and whether he would introduce legislation to remedy this defect.

Mr. D. N. Pritt (Hammersmith North—Lab.) also asked the Minister of Transport whether he would introduce legislation prohibiting the practice hitherto adopted by the railways of contracting out of liability for negligence to passengers carried on workmen's tickets or on cheap fares.

Mr. Alfred Barnes (Minister of Transport): The Railway Executive and the London Transport Executive, in accordance with the practice of their predecessors, exempt themselves from their liability at common law in respect of injury, fatal or otherwise, to railway passengers holding

workmen's tickets or certain tickets issued at reduced fares, only when the accident happens whilst the holders of such tickets are not travelling in a train or entering or alighting from a train. There is no present intention to introduce legislation on this subject.

Mr. Pritt: Does the Minister remember one or two very hard cases recently, as well as hard cases in other days, which have excited a great deal of public attention and indignation, and would he consider doing very much better than private enterprise has done?

Mr. Barnes: I would remind Mr. Pritt that railway companies have already gone a very long way to meet this difficulty, and those arrangements were confirmed, I believe, in 1936, when they decided not to plead their rights under common law.

Squadron-Leader E. L. Fleming (Manchester, Withington—C.): In view of that, is it not possible for the Government to press on with this great reform, because the position inflicts great hardship on the holder of a workman's ticket?

Mr. Barnes: I would suggest that members should study carefully the reply I have given. It is possible that they will find they have formed the wrong impression. The extent to which workmen and holders of cheap fares are now safeguarded by the decision of the railway companies is very extensive.

Mr. Pritt: Will the Minister accept my assurance that I understood his answer, but what I want to do is to get not three-quarters of a loaf, but the whole loaf?

Underloading of Coal Wagons

Lt. William Shepherd (Bucklow—C.) on March 4 asked the Minister of Fuel & Power whether he had examined the cases of persistent underloading of coal wagons to the extent of 13 per cent., details of which had been sent him by the Member for Bucklow; and what action he proposed to take to avoid this waste of wagon capacity.

Mr. H. T. N. Gaitskell (Minister of Fuel & Power): Detailed investigation of a complaint of this kind is a matter for the National Coal Board. I have already written to Lt. Shepherd pointing out that as his informant asked that the name of the firm concerned in this case should not be divulged, the National Coal Board have not been able to make any investigation.

Lt. Shepherd: Is it not a fact that both the National Coal Board and the Ministry of Transport have admitted that there is a constant underloading of these wagons, and should not this waste be eliminated, especially as they are carrying hundreds of thousands of tons of dirt with the coal each week?

Mr. Gaitskell: I do not agree that there is a mass of evidence proving the underloading of wagons. No such evidence has been produced to us.

Transport of Bricks

Sir Waldron Smithers (Orpington—C.) on January 20 asked the Minister of Transport how many trucks had been placed at the service of the manufacturers of Fletton bricks for rail transport of standard common bricks and common facing bricks during the past three months; and what has been the freightage paid, the approximate average rail haul mileage per journey and the numbers of bricks of that standard type carried into other areas where brick manufacture of similar bricks and stocks were available.

Mr. Alfred Barnes in a written answer stated: Following is the available informa-

tion for the three months ended December 6, 1947:—

Number of wagons supplied for bricks at—		Freight receipts	
		£	s. d.
Fletton	11,306	107,560	0 0
Millbrook	913	3,911	0 0
Bletchley	23	183	10 0

The average rail haul and the areas to which the bricks were carried could not be ascertained without considerable research.

Sir Waldron Smithers on January 20 also asked the Minister of Transport whether his attention had been drawn to the existence of approximately one hundred million standard common bricks lying idle in brick manufacturers' yards while railway companies hauled similar bricks to sites adjacent by road transport to those stocks; and what action he proposed to take to avoid that waste of railway transport.

Mr. Alfred Barnes stated in a written answer: My attention has not been drawn to this, but I would refer Sir Waldron Smithers to the answer which the Minister of Works gave him on December 19. Instructions issued to railway officers are that, when wagons are short, their supply for movement of bricks may be suspended.

Fuel for Buses and Coaches

Brigadier A. R. W. Low (Blackpool North—C.) on February 5 asked the Minister of Transport how much petrol and diesel oil, respectively, had been allocated to buses and coaches in the current period; how much had been allocated in the equivalent period a year ago; and whether he would give separate figures for buses and coaches on scheduled services, and those not on scheduled services.

Mr. Alfred Barnes stated in a written answer: During the twelve-week rationing period ended December 23, 1947, fuel coupons were issued to bus and coach operators to cover, say, 16 million gallons of petrol, and 33 million gallons of diesel oil. The issues during the corresponding period in 1946 are calculated at 17½ million gallons of petrol, and 29½ million gallons of diesel oil. Separate figures for buses and coaches on scheduled services, and those not on such services, are not available.

Locomotive Repairs in Germany

Mr. R. R. Stokes (Ipswich—Lab.) on March 10 asked the Secretary of State for Foreign Affairs whether all locomotive repairs required in Germany were now being carried out in that country; or whether additional repair capacity was being sought in Czechoslovakia and Belgium.

Mr. Ernest Bevin (Secretary of State for Foreign Affairs) in a written answer stated: It is not possible at present to carry out in Germany all the locomotive repairs required. Some German locomotives are being repaired in Belgium, and it is hoped to place further repair contracts in Belgium and Czechoslovakia.

Jamaica Government Railway

Mr. L. D. Gammans (Hornsey—C.) on March 10 asked the Secretary of State for the Colonies to what he attributed the increase in the loss on the Jamaican Government Railway of approximately £20,000 over the loss of £300,000 for which the Jamaican Government originally budgeted.

Colonel D. R. Rees-Williams: I will make inquiry in this matter and inform Mr. Gammans of the result.

Mr. Gammans: Can the Under-Secretary say what is the policy of the Government towards nationalised railways, which continue to lose money. Is it intended to

de-nationalise them, or to go on soaking the taxpayer?

Colonel Rees-Williams: That does not arise out of this question.

Railway Facilities in Rhodesia

Squadron-Leader E. Kinghorn (Great Yarmouth—Lab.) on February 16 asked the Secretary of State for Commonwealth Relations what improvement there had recently been in railway facilities in Southern Rhodesia, with special reference to the carriage of copper from Northern Rhodesia and chrome ore from Southern Rhodesia.

Mr. Arthur Henderson (Secretary of State for Air), who had been asked to answer the question, wrote in reply: The Southern Rhodesia Government states that general traffic conditions on the Rhodesia Railways have recently improved considerably. Exports of copper depend on the ability of the railways to move sufficient supplies of coal to the Northern Rhodesia copper belt and the position should continue to improve with the arrival of new locomotives and rolling stock. Monthly exports of copper through Beira during the year ended September 30, 1947, averaged 18,800 tons. In December, 22,000 tons were moved. Exports of chrome ore have risen from a monthly average of 14,000 tons to 20,000 tons for January, 1948, and a further increase is expected.

British-Owned Railways in Uruguay

Mr. P. Daines (East Ham North—Lab.) on March 8 asked the Chancellor of the Exchequer whether he would make a statement regarding the negotiations leading up to the recent contract for the sale of the British-owned railways in Uruguay.

Sir Stafford Cripps (Chancellor of the Exchequer) in a written answer stated: Yes. In accordance with the terms of the Anglo-Uruguayan Payments Agreement of July 15, 1947 (Cmd. 7172), His Majesty's Government sent a mission to Montevideo in November last to examine the position of the British-owned railways in Uruguay, which was accompanied by a delegation representing the British interests concerned. As was announced in the Press on March 2, the companies have now succeeded in reaching agreement with the Uruguayan Government for the sale of their properties to the Government for a price of £7,150,000. As provided in the Payments Agreement of 1947, this sum will be paid out of Uruguay's accumulated sterling balances. The opportunity of the presence of the mission was taken to discuss financial and trade questions with the Uruguayan Government. These discussions proved fruitful and should lead to a profitable increase in our trade with Uruguay. The talks were signalled throughout by the co-operative and understanding spirit in which the Uruguayan Government dealt with our negotiators, a spirit which, indeed, has always characterised Anglo-Uruguayan relations. In addition, therefore, to acknowledging the excellent work done by His Majesty's Government's mission, ably supported by H.M. Ambassador in Montevideo, I should like to express my sincere appreciation of the friendly treatment afforded to the mission throughout its stay.

Colonel O. E. Crosthwaite-Eyre (New Forest & Christchurch—C.) on March 9 asked the Chancellor of the Exchequer if he would state the method and currency in which the settlement with Uruguay for the purchase of British railways would be made.

Sir Stafford Cripps: In sterling, in accordance with the terms of the Anglo-Uruguayan Payments Agreement of July 15, 1947.

Notes and News

Firth-Brown Tools Limited.—This company, which is controlled by Thomas Firth & John Brown Limited, showed a net profit of £57,231 for its first financial year. The directors have recommended an ordinary dividend of 7½ per cent.

Rhodesia Railways Trust Limited.—A dividend of 4 per cent. is announced for the six months to September 30 last, in which period a net profit of £55,107 was earned. In the year to March 31, 1947, there was a net profit of £99,550, and a dividend of 10 per cent. was paid for the 12 months.

Draughtsman Surveyor Required.—A draughtsman surveyor is required by the Jamaican Government Railway for three years, with possibility of permanency. Candidates should have good railway experience and be able to design and prepare specifications and supervise actual construction of buildings and railway engineering works. See Official Notices on page 391.

Tube Investments Acquires Packings Company.—Tube Investments Limited announces the acquisition of Crane Packing Limited, of Slough, Bucks. This company specialises in the manufacture of heat exchanger tube packings, flexible and semi-metallic packings, insoluble lubricants, plastic lead jointing seals, flexible extractors, and tools for condenser packings.

Clerk, Class 1, Required.—A clerk, class 1, not over 30 years of age, is required for the accounts department by the Kenya & Uganda Railways & Harbours Administration, for four of three to four years, with prospect of permanency. Candidates should possess recognised accountancy qualifications and have had experience in railway expenditure accounting. See Official Notices on page 391.

Easter Restoration of Holyhead—Kingstown Day Service.—A daytime sailing in each direction on the Holyhead—Kingstown route has been restored on weekdays during the Easter holiday period (Wednesday, March 24, to Saturday, April 3, inclusive) by the London Midland Region. The additional service leaves Holyhead at 2.50 p.m. (arrives Kingstown 5.5 p.m. Eire time); and departs Kingstown at 8.30 a.m. Eire time (arrives Holyhead 12.45 p.m.). Connecting restaurant car trains run from Euston at 8.15 a.m. and from Holyhead at 1.35 p.m.

Dorman, Long & Co. Ltd.—Lord Greenwood, presiding at the annual meeting of Dorman, Long & Co. Ltd. on December 11 said he believed the steel industry would succeed in reaching the 1948 target of 14 million ingot tons. This depended, however, on adequate supplies of coal and coke, scrap and other raw materials, and transport. The industry was greatly concerned about future supplies of scrap, and there was urgent need for expeditious collection and delivery to the works. During the year ended September 30, production at the Dorman, Long iron and steel works was affected seriously by transport difficulties and their effect on deliveries of certain raw materials. From these causes they lost no less than 79,611 tons of finished steel output, of which 54,743 tons was the direct result of shifts lost because of wagon shortages and rail traffic embargoes. Referring to the Iron & Steel Board, Lord Greenwood said that after twelve months' experience he was happy to be able to say their relations

with this important body had been cordial and helpful. A realistic approach to the relations of the Government with the industry was most desirable, and it should be practicable to devise proposals on a permanent basis which, while maintaining the benefits of private enterprise and initiative so strongly displayed in the steel industry, would give the Government effective control of general policy, a general control warranted by the happy relationship of the industry to the national economy both in peace and war.

Summer Time Disparity in Ireland.—The introduction of Summer Time on March 14 in Great Britain and Northern Ireland has not been adopted by the Government of Eire, which is adhering to Western European Time. Between March 14 and April 17, therefore, a difference of one hour will apply between the two parts of Ireland, and the Great Northern Railway has produced an interim timetable to cover this period.

L.M.R. Ambulance Competition.—Camden "A" team were winners of the London Midland Region, British Railways, preliminary ambulance competition, in which the 43 best teams out of nearly 300 in the region competed at Blackpool and Derby on March 12. Other place winners in the preliminary competition, all of whom will meet in the final competition next month, were Wolverton (Bucks.), Blackburn, Castlethorpe (Bucks.), Nuneaton, Derby boiler shop "B." Bolton locomotive, Peterborough, and Horwich (Lancs.) machine shop.

Tyne Improvement Commission.—In presenting the accounts for the year ended December 31, 1947, to the board of the Tyne Improvement Commission on March 16, Mr. W. A. Souter, Chairman of the Finance & General Purposes Committee and of the board, said there was a deficit for the year of £5,245 after providing £144,937 for loan redemption. This compared with a deficit of £25,373 in 1946, but he had hoped for a credit balance in view of increasing coal shipments. The higher revenue was offset largely, however, by increased expenditure arising from increased costs. They had also been making up arrears of dredging deferred by the war, the cost of which alone was £18,316 higher. Urging the necessity of reducing arrears of debt redemption, the Chairman said they must bear in mind the possibility of new capital expenditure, as the size of vessels using the port was increasing. They were making provision for a quicker turn-round of ships, and increasing their electric cranes in the Albert Edward Dock and the Tyne Dock.

East Midland Motor Services Limited.—The Chairman of East Midland Motor Services Limited, Mr. J. W. Womar, described the future of road operators under the Transport Act as "rather obscure" when he addressed the annual general meeting on December 12. The British Transport Commission had power to promote area schemes for the co-ordination of services. Their own company, in common with neighbouring operators, had striven to provide adequate and efficient services, and he thought they had succeeded. Under a vast regional scheme there would be inevitably a loss of local consideration and planning. Moreover, the loss of efficiency in operation that would result from an unwieldy board would lead to adjustments in fares, and it might be that the low fares which the company had maintained without alteration for many years would be

increased substantially to cover the wastage. Should any such scheme be proposed in the company's area, they would take every step open to them to demonstrate the entire absence of need of any such measure.

B.I.F. Alloys and Metals Display.—A large range of carbon-free ferro alloys, pure metals, and non-ferrous alloys will be shown at the Castle Bromwich, Birmingham, section of the British Industries Fair (May 3-14) by Murex Limited at stands D.247 and 144. Various applications of the Thermit process, as used for welding and for making steel castings, will also be exhibited, with samples taken from sections of railway track welded by the process.

Brush Electrical Engineering Co. Ltd.—A satisfactory recovery in earnings of the Brush Electrical Engineering Co. Ltd. is shown in a statement issued recently by the directors, which announces a profit of £463,213 for 1947, as compared with a loss of £753,680 in the preceding year. After providing for depreciation and making adjustments arising from contracts in the previous year, the net profit is £337,611, as against a loss of £912,292. No dividend has been recommended on the ordinary stock for the year.

Mass Production of Wagons in Anglo-U.S. Zone of Germany.—Railway wagon building works in the combined Anglo-U.S. Zone of Germany will begin assembly-line production of new goods stock this summer. It is hoped to increase the number of wagons in the combined zones by more than 21,000 by the end of 1949. The first vehicles are due for completion in July, and 3,000 are scheduled to be built by the end of this year; thereafter, plans call for the delivery of 1,000 wagons monthly until the programme is completed. They will be of the open type, with a carrying capacity of about 27 tons, and suitable for coal, steel pit props, agricultural produce, and similar items. Production will be divided between five German factories in the combined zone.

San Paulo (Brazilian) Railway Co. Ltd.—No further information regarding the company's claim for compensation against the Brazilian Government was available when Mr. G. M. Booth, Chairman of the company, addressed shareholders at the meeting on March 9. He said that matters in relation to Brazilian sterling balances and the various British-owned properties in the country were so complicated that the British Government had sent a mission to Rio de Janeiro, which left this country on February 10 and had been working steadily ever since. In reply to a stockholder, the Chairman explained that attempts had been made on the appropriate dates to obtain payment of the 7 per cent. half-yearly interest on the purchase price, but without success. They had been assured that the sums due would be incorporated in the capital when that was received.

Midland Uruguay Railway Co. Ltd.—With the exception of receipts from special trains and sundries, all classes of traffic decreased substantially in the year ended June 30, 1947, resulting in gross receipts falling by £18,764 to £205,490. Working expenses rose by £4,530 to £212,206, resulting in a loss on working of £23,294, comparing with a loss of £6,716 in the previous year. Among the decreases in revenue was a fall from £42,147 to £40,656 in passenger earnings, and from £127,230 to £116,680 in goods. The deficiency on net

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OFFICIAL NOTICES

Crown Agents for the Colonies

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Employment Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

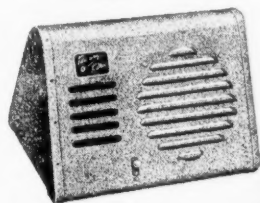
REQUIRED.—Two Technical Assistants for Track Surveying work in connection with Manchester—Sheffield—Wath electrification. Applicants should have had experience in surveying, and should have passed the preliminary examination of the Institution of Civil Engineers or other equivalent examination. Salary according to age and qualifications, and dependent on a temporary basis. Applications in writing, stating age, experience, etc., with copies of recent testimonials, to: Box 33, c/o The Railway Gazette, 33, Tothill Street, London, S.W.1.

REQUIRED for work in London. Assistants (Senior and Junior) experienced in design and building, undertake surveys and the preparation of detailed working drawings, calculations, estimates and specifications for all works in connection with bridges and structure. Engagement on a temporary basis at a salary of up to £12 per week, according to qualifications and experience. Applications stating age, experience, etc., with copies of recent testimonials, to: Box 23, The Railway Gazette, 33, Tothill Street, Westminster, London, S.W.1.

revenue account is £191,578. Goods and livestock traffic continue to be affected by the aftermath of the drought of 1942-43, from which the cattle population of the country has not yet recovered. There was a decrease of 11 per cent. in ordinary passenger bookings, although some compensation was received under this heading from receipts from special trains.

Meeting of The Society of Engineers.—Mr. C. G. Vokes, M.I.Mech.E., A.F.R.Ae.S., M.S.A.E., will read a paper entitled "Filtration," illustrated by lantern slides, at the next ordinary meeting of The Society of Engineers, on Monday, April 5. The proceedings will open at 5 p.m. with a social gathering of members and visitors, followed by the paper at 5.30 p.m. The meeting will be held in the apartments of the Geological Society, Burlington House, London, W.

Battery-Operated Intercommunication.—A new and simple intercommunication set, suitable for offices, hotels, refreshment rooms, and similar purposes, has been produced by Two-Way Talkie Limited, Neltic House, Charteris Road, London, N.4. It is operated by pressing a lever



The Two-Way Talkie equipment

Photo]

["Wireless & Electrical Trader"]

to speak and releasing it to listen and requires no mains supply, being worked from batteries which last from 4 to 6 months with normal use. The installation of the sets is easy, as they are connected by ordinary twin flex, and reception can be effected over any length up to 500 ft. In addition to the two-way set, there is also in production a four-way set consisting of a master unit and three extensions. Transmission can be effected from the master unit to all three extensions at the same time, or to each extension individually as may be required. The equipment is contained in a triangular case, 8 in.

APPLICATIONS from qualified candidates are invited for the following post:—**DRAUGHTSMAN SURVEYOR** required by Jamaica Government Railway for 3 years, with possibility of permanency. Salary £650-£750, according to experience. Free passages. Candidates should have good railway experience and be able to design and prepare specifications and supervise actual construction of buildings and railway engineering works. They should also be competent railway surveyors. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/18574/3D on both letter and envelope.

THE EVOLUTION OF RAILWAYS. Second edition, revised and enlarged. By Charles E. Lee. Traces the germ of railways back to Babylonian times. Cloth. 8½ in. by 5½ in. 72 pp. Illustrated. 6s. By post 6s. 4d.

FIRST PRINCIPLES OF RAILWAY SIGNALLING. By C. B. Byles. Most treatises on railway signalling are intended for the railway signal engineer, but this is an elementary treatise. Cloth. 7½ in. by 5 in. 146 pp. Illustrated. 4s. By post 4s. 3d.

long, 6 in. high, and 6 in. wide at the base, standing on rubber feet.

The Society of Engineers' Examinations.—The Society of Engineers' examinations will be held on May 4 and 5, and applications to be examined will be accepted up to April 20. The syllabus and latest rules may be obtained from the Secretary, 17, Victoria Street, London, S.W.1.

Railway & Canal Securities (Conversion Date) Order.—The Minister of Transport on March 2, 1948, made the Railway & Canal Securities (Conversion Date) (No. 2) Order, 1948 (Statutory Instrument 1948 No. 433), under paragraph 1 of Part II of the Fifth Schedule to the Transport Act, 1947. Copies of the Order are obtainable from H.M. Stationery Office at York House, Kingsway, London, W.C.2, or at Edinburgh, Manchester, Cardiff, or Bristol, or through any bookseller, price 1d. net each.

French Railway Posters.—Relaxation of the restrictions on holidays abroad for British tourists will permit of a more personal interest and pleasure being taken in a new and colourful series of pictorial posters issued by the French National Railways than the purely artistic appreciation which their production warrants. They include a pictorial map of France, representing the historical associations and scenic attributes of many areas; and a railway map with a border showing mainline steam electric, and diesel trains, a S.N.C.F. tourist motorcoach, and carriage interiors.

Eastern and North-Eastern Region Easter Trains.—To strengthen the normal train service, the Eastern and North-Eastern Regions of British Railways are operating a programme of 664 relief trains for Easter. The Eastern Region total is 468, including a number of duplicate and triplicate trains from Kings Cross, Liverpool Street, and Marylebone on March 25 and 30. The North-Eastern Region is running 196 relief trains, and is extending to Kings Cross on March 25, 29, 30, and 31 the 12.15 p.m. Newcastle to York via Sunderland train. On Good Friday the normal Sunday services will run, with certain exceptions; and on Saturday, March 27, and Easter Monday, March 29, normal services generally will be maintained, with some modifications and the withdrawal of business and workmen's trains. Restaurant and buffet cars are being withdrawn from

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—**CLERK, Class 1**, required for Accounts Department by Kenya & Uganda Railways and Harbours Administration for tour of 3 to 4 years, with prospect of permanency. Salary according to age and experience in scale £420 rising to £480 a year, plus cost-of-living bonus £60 for single man and between £125 and £187 10s. for married man, according to number of children. Outfit allowance £30. Free passages and quarters. Candidates, not over 30, should possess recognised accountancy qualifications and have had experience in Railway Expenditure Accounting. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/18537 (3E) on both letter and envelope.

PLASTICS IN RAILWAY ENGINEERING. By T. Lovatt Williams and D. Warburton Brown. 1s. By post 1s. 2d.

SECTIONED PERSPECTIVE VIEW OF LOCOMOTIVE FRONT END. A notable drawing of L.M.S.R. class "7P" 4-6-2 locomotive of the latest type. Reprinted from The Railway Gazette, June 15, 1945. Price 2s. 6d. Post free 2s. 8d.

certain trains during the Easter holiday period to provide more seating accommodation.

Drive to Salvage London's Waste Paper.—The Waste Paper Recovery Association's drive to salvage accumulations of paper in industrial and business premises is being extended to include the London postal district and the County of Middlesex. Members of the Newspaper Proprietors' Advertisement Committee will, as a voluntary effort in the national interest, organise a canvass of all premises in this area where satisfactory systems of paper salvage are not already in existence. Contact will be made with all organisations where accumulations of paper are likely to arise. Already, in one newspaper office, 12 tons of paper, which were collected in five days, have been salvaged.

More Equipment for Hotels.—The British Tourist & Holidays Board has received from the Board of Trade a further supply of hotel equipment, and is able to invite applications for an allocation from hotels, guest and boarding houses, and holiday camps catering for transient visitors. This allocation consists of sheets, towels (for use of overseas visitors only), certain types of utility furniture, and non-utility furnishing fabrics. Intending applicants should obtain forms, which must be returned by April 3, from the British Tourist & Holidays Board, Room 306, at 64, St. James's Street, London, S.W.1. Scottish applicants should obtain forms from the Scottish Tourist Board, 20, York Place, Edinburgh. The Board states that towels and furnishing fabrics can be allocated only to establishments of known importance to overseas visitors, and in certain cases to establishments which suffered as a direct result of the war.

Jonas Woodhead & Sons Limited.—Captain Allan G. Kyle, Chairman of Jonas Woodhead & Sons Ltd., said at the company's annual general meeting on February 12 that a year of successful trading had been achieved in spite of difficulties of every shape and form. Delivery of essential steel requirements had been spasmodic and unreliable, but the replanned allocation of steel now gave them renewed hope. Trading profit had shown a gratifying increase from £49,021 to £73,868, and they were transferring £10,000 to general re-

serve, maintaining their dividend at 10 per cent. on the increased capital of £450,000, and raising their carry-forward to £23,661. There should be no misunderstanding as to the seriousness of the question of steel nationalisation. If this were to stop at the billet stage they would not be affected, but if it was to include distant companies like themselves, then, only provided that those who were going to be responsible for this catastrophic change-over were aware of the sensitive and far-reaching operations of this vast industry, would they have no cause for undue anxiety. The Chairman said that the new factory in Scotland would be in full operation shortly, and that the South African interests were progressing favourably. The group of companies was never in a stronger or more healthy state than today.

London Transport Dramatic Society.—On Thursday, April 1, at 7.30 p.m. at the Scala Theatre, London, the London Transport Dramatic Society will present "The Mikado."

Great Northern Railway (Ireland) Locomotive Stock.—The figure of 40 locomotives in the stock of the Great Northern Railway (Ireland) quoted on page 180 of our February 13 issue applied only to the company's tank locomotives. The G.N.R. owns 150 tender locomotives of the 4-4-0 and 0-6-0 wheel arrangements, giving a total stock of 190 locomotives.

Polhill Tunnel Relaying Completed.—Early on March 22 Polhill Tunnel, on the Southern Region main line from Charing Cross to Tonbridge, Dover, and Hastings was reopened after having been closed for three weeks during relaying work. Traffic through the tunnel was restored ahead of the time originally estimated. A maximum of 260 men was employed in the tunnel every 24 hr. in two shifts of 130 men each; and 60 men were employed outside the tunnel, largely in disposing of excavated material. A description of the work undertaken was given in our February 20 issue, and a short account of the mechanical method of ballast excavation used appeared in our issue of March 12. During the relaying, the new 60-ft. lengths of track were laid at the rate of one every 3 min., and, on an average, 34 lengths of new track were laid in 4 hr. The work has been in charge of a team of engineers headed by Mr. A. H. Cantrell, the London East Divisional Engineer, and Mr. J. West, his Assistant. The Resident Engineer, Mr. T. Hobson, lived on the job in a camping coach throughout the entire operation.

Forthcoming Meetings

March 30 (Tues.) to April 3 (Sat.).—The Model Railway Club Exhibition, at Central Hall, Westminster, S.W.1. Tuesday, 2 p.m. to 9 p.m.; Wednesday-Saturday, 11 a.m. to 9 p.m.

April 5 (Mon.).—The Society of Engineers at the apartments of the Geological Society, Burlington House, London, W., at 5.30 p.m. "Filtration," by Mr. C. G. Vokes, M.I.Mech.E., A.F.R.Ae.S., M.S.A.E.

April 5 (Mon.).—The Institute of Transport, at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 5.30 p.m. for 6 p.m. "Inland Water Transport," by Mr. W. Fraser, M.A., A.M.Inst.T., formerly Secretary & Traffic Manager, Trent Navigation Company.

Railway Stock Market

Hopes that political developments will speed Marshall aid to Europe have encouraged a better tendency in stock markets, where a rally in British Funds also was a helpful influence. The rally in gilt-edged was led by Transport stock, which was accompanied by City talk of official support in preparation for the forthcoming issue of British Electricity stock. Terms of the latter must be expected to have a dominating influence on the more immediate outlook for British Funds. Prevailing view is that the new stock will be issued at par and carry 3 per cent. interest, and it is now assumed that the life may not be more than ten years shorter than Transport (1978-88). If, however, the life were longer than this, the market view is that there might be a sharp fall in Transport stock.

There has been very little activity in foreign railway stocks, and Leopoldina eased to 14½, latest reports from Rio de Janeiro indicating that negotiations are making very little progress. San Paulo ordinary has been fairly steady at 158, although in some quarters it now is feared that payment for the line may be deferred further until there is a definite decision as to taking over the Leopoldina Railway. Central Uruguay and stocks of other Uruguayan railways have been much quieter, awaiting an official statement as to the share-out terms of the various classes of stock, based on the compensation money. It is realised, however, that no immediate statement is likely, and meanwhile all classes of stock must be regarded as carrying a good deal of speculative risk, apart from Central Uruguay debentures, which may prove to be undervalued at current levels.

Elsewhere, Great Western of Brazil shares have been firm at 75s. There was a small business in Argentine railway ordinary and preference stocks. United of Havana 1906 debentures eased further to 15, but Antofagasta ordinary and prefer-

ence have been steadier at 11½ and 61 respectively at the time of writing. Beira rails rallied to 52s. 6d., but Canadian Pacific turned easier at 18½; the preference stock was 75 and the debentures 109½.

Firmness has been maintained in road transport and bus shares, reflecting market hopes for a statement shortly after Easter from Thomas Tilling indicating the amount to be received for assets acquired by the British Transport Commission. As in the case of other road transport undertakings and all concerns threatened with nationalisation of important assets, the market is uncertain whether compensation moneys will be retained for investments in new fields, or whether there will be a partial return of capital to shareholders.

There has been a better tendency in industrial shares generally. This was partly a reflection of the rally in British Funds, but was due to some extent to reinvestment by investors who have sold electricity supply shares because of the loss of income involved by the exchange into British Electricity stock. The better demand for industrials led jobbers to mark up prices moderately. It was found that, owing to the inactive market conditions which have ruled in recent weeks, there was not a great deal of stock available. Demand has centred on shares offering good yields on the basis of last year's dividends.

Iron and steel shares have continued to attract attention because of their good yields, Dorman Long, United Steel and Stewarts and Lloyds being among those to show further moderate gains. Moreover shares of locomotive building and engineering companies have been firmer, with Vulcan Foundry changing hands up to 29s. 6d. The City is awaiting the Budget on April 6 with great uncertainty. It is not expecting a higher Profits Tax; but on the other hand, rules to be followed in connection with the voluntary limitation of dividends are likely to be drawn up.

Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ended	Traffics for week		No. of Week	Aggregate traffics to date	
			Total this year	Inc. or dec. compared with 1945/46		Total 1947/8	Increase or decrease
			£	£		£	£
Antofagasta ...	834	14.3.48	52,910	+ 12,470	11	560,830	+ 164,110
Bolivar ...	174	Feb., 1948	887,758	— 825,850	9	8186,305	— 842,372
Brazil ...	...	...	39,171	+ 397	37	1,264,164	— 105,699
Cent. Uruguay ...	262	Jan., 1948	39,420	+ 9,103	31	237,139	+ 46,797
Costa Rica ...	70	Feb., 1948	16,700	— 12,900	9	39,800	+ 20,500
Dorada ...	1,030	13.3.48	37,500	— 1,400	11	423,100	+ 2,200
G.W. of Brazil ...	794	Jan., 1948	81,257,553	+ \$ 76,145	5	81,257,553	+ 876,145
Inter. Ctl. Amer. ...	22½	Feb., 1948	890,232	— 89,559	9	8168,310	— 856,757
La Guaira ...	1,918	13.3.48	44,308	— 17,662	11	574,204	— 111,822
Leopoldina ...	483	31.5.47	ps. 1,464,000	+ ps. 459,100	22	ps. 7,706,200	+ ps. 5,220,000
Mexican ...	319	Jan., 1948	20,654	+ 7,149	31	126,102	+ 317
Midland Uruguay ...	382	15.3.48	11,222	+ 4,634	11	57,001	+ 18,463
Nitrato ...	113	Dec., 1947	3,686	— 2,085	26	29,982	+ 4,068
N.W. of Uruguay ...	274	12.3.48	£ 71,385	+ £ 12,002	37	£ 2,428,887	+ £ 69,133
Paraguay Cent. ...	1,059	Feb., 1948	152,387	+ 19,314	35	1,359,079	+ 157,544
Peru Corp. ...	100	Dec., 1947	£ 251,000	+ £ 43,000	26	£ 722,600	+ £ 102,600
San Paulo ...	153½	Feb., 1948	8,995	+ 6,125	35	58,605	+ 23,900
Taltal ...	156	13.3.48	122,490	+ 23,292	37	2,520,645	+ 410,024
United of Havana ...	1,301	13.3.48	1,216	+ 5	31	7,721	+ 1,521
Uruguay Northern ...	73	Jan., 1948	...	...	...	...	...
Canada							
Canadian National ...	23,535	Jan., 1948	8,500,500	+ 286,000	5	8,500,500	+ 286,000
Canadian Pacific ...	17,037	Jan., 1948	6,231,500	+ 391,750	5	6,231,500	+ 391,750
Various							
Barsi Light ...	202	Feb., 1948	20,445	+ 772	48	270,367	+ 24,825
Beira ...	204	Dec., 1947	127,025	+ 39,202	13	352,913	+ 83,760
Egyptian Delta ...	607	20.2.48	20,080	+ 3,244	46	551,324	+ 53,152
Gold Coast ...	536	Dec., 1947	204,032	+ 8,365	39	1,392,691	+ 230,301
Manila ...	...	...	...	...	...	...	...
Mid. of W. Australia ...	277	Jan., 1948	27,029	+ 9,233	31	162,529	+ 43,451
Nigeria ...	1,900	Jan., 1948	521,787	+ 59,708	44	3,899,303	+ 20,011
Rhodesia ...	2,445	Sept., 1947	643,980	+ 102,833	52	6,787,603	+ 612,938
South African ...	13,323	28.2.48	1,303,761	+ 90,400	48	60,504,597	+ 5,218,178
Victoria ...	4,774	Nov., 1947	1,392,699	+ 188,174	22	...	...

† Receipts are calculated @ 1s. 6d. to the rupee